EDUCATIONAL REVIEW

FEBRUARY, 1904

I

UNIVERSITY QUESTIONS CONCERNING THE COMMON SCHOOLS[1]

"Problems of higher education," the topic which the committee in charge of the program of this meeting urged me to present, is certainly broad enough. If I should dare to enter upon some of the problems which are discussed seriously and enthusiastically for long hours in the universities, you would not listen, or if your courtesy forced you to listen you might wish that you had never been born. Yet, let us not infer that the time of the universities is occupied in meaningless or useless discussion. What may not interest us may be of the deepest concern to the world. Indeed, it might so be that the fact that the subject is hard to search out is the very reason why it does not interest us. We have small place in a State Teachers' Association unless we are glad that there are men who have more interest in research and discussion than in a Thanksgiving dinner, or summer vacation. Out of it new truth comes, laboriously, a little at a time, but the sum of it gains ground for the human advance: and the advance is what gives life a zest and a meaning which make it so well worth the having.

But if I cannot go into these matters very generally, I am glad of the opportunity to treat, in this presence, some university questions touching the common schools. I wish I

[1] An address before the Illinois State Teachers' Association at Springfield, December 30, 1903.

might have the confidence that I could do it plainly, wisely, without bias, or injustice to any, and in ways which would be helpful to the members of a great State association of teachers.

By the "Common Schools," splendid and meaningful old term that it is, I mean schools that are wholly supported and managed by the people, wholly free from partisanship or sectarianism, and doing the work, either primary or secondary, adaptable to children under the age when they may be deemed to be fairly safe in living away from home.

LENGTH OF COURSES IN UNIVERSITIES AND SCHOOLS

The first of these questions to come to our minds, because some of the university presidents have been discussing it in the late conventions, relates to the length of the courses in the colleges and below. The older and statelier universities used to receive students in their professional schools without any college training whatever: now they are beginning to exact a college degree. Thirty years ago a medical course at the best university medical schools in the country covered a working period of from eight to twelve months, whereas a course now requires from twenty-four to thirty-six months distributed thru four years. But that is not all. In these schools the implication is very common that if one really expects to be thoroly equipped for the medical profession he must return and take a year or two of graduate work. And even beyond that looms up the rather definite assurance that complete professional expertness lies in the student's being capable of winning an appointment as intern at a great city hospital and finally of gaining the great opportunity of working with the old doctors for a couple of years more. Under this process, the danger that the student may die before he is fully qualified to save another from dying becomes a fact which, if it is to have any general application, must be reckoned with.

If any voice is to be raised against the preliminary requirements, or against the length or the depth of the courses in these professional schools, it shall not be mine. Out of this grade of work are likely to issue the most distinctive scientific

achievements and the most beneficent service to human kind. If universities can sustain professional schools upon this plane, so much the more honor to them.

But this length of time in preparation for life work is very commonly regarded as unduly long. Allowing eight years for the elementary school, four for the secondary school, four for the college course, and four for the professional course, it delays the real beginning of work until one is from twenty-six to thirty years of age. Certainly all universities cannot sustain that. What is to be done?

It is suggested that the college course leading to the A. B. degree be shortened. It is said that this course may be reduced to three years without any diminution of the work heretofore required. It is quite possible that the greater efficiency of the secondary schools tributary to some colleges and universities may make this practicable with them. Where this is so, who shall object? If some universities can take that attitude and sustain it, it may be said again, honor to them.

But all universities cannot do that. Perhaps such as try it may not succeed in, or may suffer for, it. That is their matter. They are of age, and of sound mind and memory still, and it is a free country. Let them try it. And let the rest of us not worry on their account. The universities which are trying it are foremost in America, guided by men who are the most experienced and trusted leaders in American education. If they succeed, as there is reason to believe they will, their move will mark a distinct advance in the standards of our professional learning without sacrificing anything preliminary thereto, or disarranging the educational system below them.

But certain it is that all universities cannot do this. The others cannot think of professional courses any shorter or less thoro than the best. And they have sufficient reason to fear that they cannot sustain four-year professional courses on the basis of a college degree for entrance, or that they cannot get students competent to do the work heretofore required for the degree, and thus necessary to maintain its standing, in

three years. What are they to do? Well, they are out with some proposals. They are feeling of the country. They propose to let the college course be crowded out altogether, or to make a sort of college of the secondary school by extending its course from four years to six, and they have just commenced to cap the climax by advising the cutting of the elementary course from eight years to six. To insure a few boys against death before they complete their professional education in the very first schools in the land, they would blame and harm all boys and girls in the country for not having been born early enough.

All of these propositions have not come from the same source. The authors of one would not sustain another, and they had the right to propose one without being held responsible for another. But all have come from knocking down the first brick. One has led to another. It seems to me that the original proposition as it came from Harvard University, that the time for the college course be shortened without diminishing the work required for the degree, and without serious interference with the plan of the schools below, has well served its time for discussion in the educational conventions, and if it stood alone I should not presume to take it up here. But the resulting projects are surely not to go forward without resistance. The colleges of America are not to be suppressed thru a resolution in a university conference, and the great common-school system, primary and secondary, is not to be shuffled in the game of university pre-eminence.

The A. B. degree represents a cherished ideal in America, and a very common sentiment among the educated men and women of the country feels outraged at any suggestion of its sacrifice. It is being steadfastly maintained and upheld by many small colleges of moderate means without large equipment. Many of these colleges of slender endowments have a splendid history, for they have given trend and fiber to American scholarship thru all the formative period of the Republic. The great universities have come to stay, but that is no reason why the colleges shall go. The particular work which they have done needs to be done as much as it ever did, and they

can do it as well as they ever did. Surely there is educational work enough for all. They are to be revered and honored for what they have done. Their affectionate children will not permit them to be suppressed, and the very common sympathy and support of educated opinion in the country will be with them. It is the poorest kind of educational policy to aid or consent to their overthrow. It is abhorrent to think of their sacrifice because of university competition.

But this is not all that is to be said if these new schemes are to be urged with any seriousness at all. The last report of the Commissioner of Education shows that of the entire attendance upon American schools, public and private, elementary, secondary, collegiate, normal, law, medical, theological, technological, and all the rest, 94.38 per cent. were in the elementary schools, 4.21 per cent. in the secondary schools, and 1.41 per cent. in all the rest put together.

Observe the great step there from the elementary school to the high school. Of every hundred youth who come into any American school ninety-four never go beyond the elementary school. It is said that they may do in six years all the work they now do in eight. We will let the people who say that prove it. It has not been proved. It cannot be proved. Men who say that base their opinion upon children from favored homes, in little hot-house schools, attended by the experts developed in a university. Of the mass it is not true. Of course, a small number of children could do the ordinary work of our elementary schools in six years. Why not let such do it and go on? Why not fix administrative machinery so as to give the few the chance which belongs to them? Or, indeed, why not have some more work in the elementary schools, some graduate work, or some other device for making sure that we keep all who are not going to the high schools busy for the eight years, and perhaps for prolonging the school life of some of the 94 per cent. who will cease going to school altogether when they leave the elementary schools? Why shorten the work and lessen the chance of nine-tenths of all who ever come into the schools at all?

Possibly there is less ground for energy of protest against

lengthening the work of the secondary schools than for shortening that of the elementary schools, but valid objections to it are not wanting. The attendance upon the secondary schools is not likely to be increased by lengthening the course. Do you not suppose that many parents in moderate circumstances are brave enough to face a four-year course who would feel a six-year course too long for them? Do you think the attendance upon the colleges will be enlarged by making a uniform secondary course of six years? Would there be any greater unity in the educational system or any less confusion in the colleges if we had both four- and six-year high schools? With the present arrangement, a boy who goes to college does not naturally go before he is eighteen: would you delay him beyond that time? By the time a boy is eighteen it is time he had some severance from his parents; a normal boy knows enough to take it by that time. He will mature and broaden more rapidly and strongly by going away from home. If he is to go to college at all, he should go by that time. And he never "goes to college" until he goes away from home. If he is not to go to college, it is high time at eighteen that he should go to work.

Again, I am willing to say that it seems to me the public high schools on the plane now established, with such natural improvement in accommodations and equipment as time and experience will bring, go about to the limit of cost which it is good policy for the educationists of the country to insist on imposing upon local communities. My personal judgment is that the people have supported the public high-school movement very heroically, and that it is well for us to say so. It may well be doubted whether it is good educational policy to demand more work of the high schools under all the circumstances of their support and administration, whether we look upon them as fitting schools for colleges or not. We have in this State a score or so of high schools capable of easily doing all that is asked. Some of them are already lapping a part of the first year of the college course. But for every one of these there is another score which meets the demands inadequately and with difficulty. Yet in most cases the Illinois

towns are sustaining their high schools very well indeed, closely up to the limit of their understanding of the needs of the case and their ability to give the moneyed support which is required. It is better to make such allowance as may be just in the few cases where their course laps ours, and help the others to do the work which is comfortably within their reach, than to engage in a movement of very doubtful educational expediency if it could be carried out, and which it would be almost, if not quite, impossible to carry out.

Yet, again, it may be well to recall that these schools are not the property of the universities. For tone and fiber, and all the uplifting and guiding influences, they are more dependent upon the work of the universities than they often remember; they have now got where they need the aid of the higher learning to help them to greater proficiency; and it assuredly would be better for them and for the universities if they saw this more clearly than they do; but neither the American elementary nor secondary schools are in any sense the creation of the universities. They are both the products of our free democracy. The public free school, in its inception and its development, expressed no purpose of the college, and had nothing to do with supplying students to the college in the formative periods of our social and educational organizations. Indeed, it is not going too far to say that the free public school was the answer and the protest against the sectarianism and the exclusiveness for which the early American college stood. And this is no more true of the free elementary than of the free secondary school. Forty years ago there was not a university in America, in the sense in which we use the term now; nor was there a college in America with one-fourth the number of students the University of Illinois has now. Only a small number of young men from the most intelligent and best-to-do families went to college, and they went up thru the private schools and academies; and every time a high school was developed in the neighborhood of a private school or academy it was against such vigorous opposition as the private institution could gather, and such incredulity, skepticism, and active hostility as the colleges to which the academy was tributary could

exert. The contest was widespread and often exceedingly bitter. The people had the issue very well settled in the East before the state of development had come in the West which made an issue possible, and even when that stage came in the West democracy was so much more virile here than there that the West escaped the issue altogether. But no one will be courageous enough to say that in the West the high schools, however much they have been aided by, have been the product of, the universities. So it may not be out of place to observe that when a company of men, representing any class or factor in our life, get together to determine what shall be done with the lower schools, they labor under the serious difficulty of being without jurisdiction.

The common schools, primary and secondary, are the offspring of American life and conditions. They flow out of those conditions as naturally as the Mississippi pours from the Minnesota lakes. No element in our Republic caused them, and none could stop them, and none can govern them. They are the expression of national life, the instruments of national purposes, unprecedented in the world. They have come to their present form and plan thru the self-conscious power, the intellectual foresight, the genuine heart impulses of our steadily unfolding and sturdily strengthening democratic life. They rest upon not a little formal law, and upon at least one great governmental power which goes down quite as deeply into the ground upon which the structure of government rests as any other power found in our constitutions. They are safeguarded by common sentiment and by settled usage, which are quite as steadfast as laws and constitutions.

I am not implying that none of the plans of the common schools are to be changed. They will be changed slowly, conservatively, when it is clearly to the advantage of the common schools that they shall be. They will never be much changed when the advantage is speculative. When changed it will be out of full experience, thru the ripened sentiment of the people, by the activity of officials and boards responsible for their efficiency, thru the legislatures which alone have sovereign educational power. One thing seems very certain. Their terms

are not likely to be made shorter that the terms in law schools and medical schools may be made longer.

No one can object that some of the universities are developing great scientific and professional schools. On the contrary, all must be very glad. We have a common national pride in them. We hope such youth as can afford the time and the money will take advantage of them, and that those schools will go ahead and break out new roads and gain the very mountain peaks of professional eminence. But not at the surrender of cherished ideals; surely not at the cost of a balanced educational system, or at the expense of the largest educational opportunity for the ninety-and-nine who go no farther than the common schools.

And it seems quite possible for a small number of these great professional schools to go all the lengths they desire, without suppressing any other educational enterprise, or without attempting to recast in a day or two a school system which has been a century in the growing. And it seems quite probable that the greater number of universities cannot do that, and therefore that they ought to be complacent about not doing it.

It is a false assumption that all universities should do the same thing in conditions which are very unlike. I will not say that the tendency to imitate is the great curse of American education, but I will say that the inability to discriminate about what we shall copy, in the scramble for primacy, is a weakness from which some of us have occasion to pray to be delivered. Some universities do not dare to do what they propose unless all universities will do the same thing at the same time, and it is bad for universities to have robust convictions about policies, with no courage to carry them out. It is well that the requirements and the offerings and the length of courses of each shall follow the outlook and be limited only by the resources and the bravery of each.

It is more desirable that each university shall serve its constituency, keeping a little ahead of and yet in touch with its people, than it is that all do just the same things and aim at precisely the same ends. The fact that Harvard or Columbia University requires a college degree for entrance to profes-

sional schools might be one good reason why the University of Illinois should not. It is hardly likely that all who are going to study law or medicine are going to start with college degrees in our time. The University of Illinois is likely to get as many degree men in its professional schools as it can thoroly satisfy, and it is perhaps better that some who have no degrees shall come to its schools of medicine and of law than go to some places which I haven't the meanness to designate at this Christmas season. And the University of Illinois is not nettled because she cannot do all that Harvard or Columbia does. Harvard was 232 years old when she was born. The Harvard Medical School was an hundred years old when ours first blinked its little eyes. Yet we are doing some things, in which the people believe very warmly, better than Harvard can ever do them, and if we each keep on growing at the present rate, our department of mathematics will have quite as much satisfaction as theirs in finding the point where the curve of the Illinois advance will project across the line which illustrates the growth of Harvard.

And so let each of us have the sense and the courage of our own situations. Let time determine whether the best situation is in Boston or New York or even Chicago, or whether it is not out where the sun shines and the flowers bloom and the fields bring forth great harvests, where the air is fit to breathe and the water fit to drink, and where men and women seem to grow most naturally and most luxuriantly. And tho we do not all go the same road nor all come out at exactly the same place, between us we shall probably, in the long run, make a more notable contribution to the democracy of learning.

UNIVERSITY INFLUENCE UPON THE TEACHING BELOW

No subject lays more claim to cautious consideration by American universities than the influence of those universities upon the kind of work laid out and the quality of the teaching done in the lower and the middle schools. And there are few subjects with which universities find it more difficult to deal in satisfactory and helpful ways. Let me suggest some of the difficulties as they appear to me, altho I well know that many

university men will fail to recognize some of them and will flatly disown others.

The science of education is a new science. Some university men are pursuing it carefully and with important results. Of these, more find interest in the psychological than the pedagogical side of it, and even in psychology they find more fascination in abnormal than in normal intellectual processes. This is natural enough in the research work of a university, but it is the least helpful to the work and the teaching of the lower schools. But there are more university teachers who have no time for, or no interest in, a science of education than there are who are helping it. There are not a few who repudiate it altogether. Like other institutions, universities do not readily break from the usages and understandings they have commonly followed. Universities have not been accustomed to bend their backs to lift up the schools below. Indeed, they have hardly been used to much association with other institutions of equal grade or of lower grade in an educational system. The traditional tendencies of universities have been toward independence and exclusiveness. The difficulty of their teachers in so expressing themselves that they might be understood by the common people has only been excelled by their inability to understand the thought and outlook of the masses. Not a few university teachers are as unconscious of what the people are thinking as the people are ignorant of what the university teachers are doing. It has remained for the virile influences of our democracy, for the developing plans of our American educational system, to change this. There was but little move in this direction even in America until the universality and efficiency of the common schools made it rather obvious that universities must expect the students most vital to their life from this source, or contemplate the alternative of going without them; nor until the marvelous growth of the State universities had given adequate emphasis to the protest of our democratic society against the exclusiveness of attitude and the narrowness and onesidedness of instruction prevalent even in American colleges and universities. But the demonstration has been sufficiently complete and apparently very well compre-

hended. They are all ready enough now to do and dare for the common schools. The old attitude was sincere and the new one is genuine, if not easy. And if universities are as very clumsy in helping the lower schools, as a young father might well be in snuggling his firstborn to his heart, or as a sergeant of police might be in cuddling a foundling, there ought not to be impatience so long as we may feel assured that there is an ample appreciation of what needs to be and that adequate power and good intentions are moving on correct lines.

The whole plan of the universities—the kind of work and the plan of procedure, the ways of teaching, the independent and self-dependent life of the students, the feeling and outlook of the whole university body—is a radical departure from that of the schools below. This, it must be admitted, really unfits some men for usefulness in the world or helpfulness to the schools below.

Again, some university men lose their heads thru their freedom. They go floating around in the upper ether, often in a kind of irresponsible intellectual intoxication. Some of them even soar the higher and dissipate the more recklessly because only fool things get into the newspapers and nothing is so idiotic as to bar it out. But the primary and the secondary schools have to rest upon the earth, and have to respond to very matter-of-fact people who are guided by considerations not ordinarily exploited in the newspapers. To find a way to sustain free thinking and limit fool talk, to protect one in his academic liberty and yet keep him anchored to the verities of life, is a problem of higher education which we will not go into now, but which surely has a very vital bearing upon the helpfulness of universities to a general system of education.

Nevertheless, let us not forget that universities are not new developments. They are the products of the best thinking and the highest purposes of the world thru a thousand years. They have come to their present estate thru a long, long process of accumulation, of opposition and ridicule, of aspiration and discussion, of giving and doing and sacrificing which comprise the finest heroisms in all the world. No ruthless or unfriendly hand shall assail them. As Randolph said of

Virginia, " No one shall criticise her but me." A State Teachers' Association would find a big job in forcibly reorganizing them. The plan and work and ideals of the universities change, but marked change in the thought and policies of universities is a laborious process, and must proceed slowly. Under all the circumstances, the American university advance is most surprising. Pray tell me, if you can, where and when in all the intellectual development of the world there have been such changes in the work and the ideals of advanced education as in the last generation have been forced upon American colleges by the swelling and throbbing impulses of our spontaneous national life. But great as those changes have been, there is sufficient reason for believing that American universities will go still farther in response to popular demands, and will be much more serviceable in coalescing a great national system of education in the years to come than in the years that are gone.

What and how much may the American public expect from American universities in making the best practicable educational system? Not unmindful that any answer to this question must be very open to criticism and discussion, I offer this answer.

We may expect that American universities will not necessarily copy English or French or German models, but will conform to American ideals and aim to serve the intellectual and industrial life of our own country.

We may expect that they will realize that there is a science of education and pursue it; that they will not assume that this may be done very effectually in a laboratory of experimental psychology alone, nor yet in a little school of pupils from favored homes who pay tuition alone, nor yet again by theorists who have little of the feelings and know little of the spirit which centers in the common schools; but rather in the ordinary schools of the country, and with knowledge that those schools are the people's schools, are not to be overhauled every time a professor in a university grows a new convolution; but improved cautiously, only by innovations which have passed the stage of doubtful experiment and are able to command a

very substantial public approval; and also that they will realize that the problem is exceedingly large because of very wide application, and is nothing short of welding together all kinds of people in a common purpose to raise the level of national intelligence and virtue.

It may be expected that college teachers will mingle more with the lower schools, gaining a truer understanding of their purposes and their difficulties, realizing, what the public sees, that one may be very expert in one thing and only slightly expert in other things, and that a great expert is in quite as dire peril as anyone else when he dabbles in other subjects than the one he possesses.

University teachers are gathered from the great schools of the world. Some of the greatest have never been in our common schools, and it must be admitted that some who have been in them have been out of them so long, and have gone thru so much in the meantime, that they have only a very inadequate conception of the intricacies of common-school life. If the common schools are to be the large source of supply to the universities, the process of assimilation must lead more university men to understand the limitations which are upon the common schools and to realize that it may not be well to exact some things of them, or to burden a community beyond the limit. It is likely, too, that more importance will be attached to the exactness of the teaching than to the number of things done in preparation for college work; that there will be a more generous recognition of the claims of other subjects than their own; that they will see a larger value in a balanced system of education which holds out the fair chance to the large percentage of pupils who are not going to college as well as to the relatively small number who are; and that they will get where they can stand for the common opportunity for all, not as a mere form, or in a patronizing way, but with genuine enthusiasm, because they will see that a good large percentage of the captains of the world are men of the crowd who have been able to make the most of their chance. The smooth and continuous road from the kindergarten to the university is an admirable thing, but there will have to be places upon it where the many

who must, or who wish, may leave it and go to work without being humiliated, or unfitted for the life they are to lead.

The activities for which the universities stand have a weighty influence upon the lower and the middle schools. Until our day, the universities have mainly stood for literary culture, for philosophical discussion, and for a little research in the natural sciences. They have just fairly begun investigation in the industries of the people and broadly to uplift the intellectual and social life of the multitude thru the applications of science to work. This new tendency has already engaged popular interest and enthusiasm. It is already bringing popular support to, and creating popular demands upon, the universities. It is inevitably destined to go much farther, and it will certainly relate back to the instruction in the earlier schools. The trend of those schools, their ideals of the educated man, will not lead inevitably to the library or to the old-time learned professions, but as well to the producing, transporting, manufacturing, building, and commercial industries. There may even be danger of this thing going too far. It is for the universities to stand for learning in any field, to repel all that is not scientific and not true, and above all, to keep all of the schools of the country bound together in purposeful accord, and moving safely to the accomplishment of the national ideals. The destiny of our democracy is wrapped up in integrity, in mental acumen, in manual industry, in living by work more than by wits, in the equal chance for all, in international generosity and straightforwardness. The schools, high and low, must make for these great ends, and the universities must place themselves on stronger ground to help all the schools to do it.

There will surely be more concern to avoid any weakening of the schools below by attracting their pupils before they have completed all the work which the elementary and secondary schools can give them. It deals an irreparable injury to those schools. It wrongs the pupil, humiliates the college, and weakens the whole educational system.

An Eastern university president just shivers at the thought of our accrediting system, *i. e.*, at receiving students on cer-

tificates. Yet, it is all right. We shall perfect it and adhere to it. It takes a few to college who ought not to go, but it also leads a far greater number who would otherwise never go. The few who are not prepared drop out. Schools have pride, and do not care to send up pupils who cannot do the work. The system is doing more than anything else I know of to brace up high schools in the smaller towns; it is strengthening the relations between the colleges and the secondary schools, and toning and consolidating the educational system. It is better to examine schools and honor their certificates than to turn boys down thru examinations by educational autocrats who know nothing of them or their work. Let us be careful about the certificates we give. Let us keep drawing together and not be worried. The Eastern feet are slipping, and we may well believe that the Eastern universities will all get around to it after a time.

We may confidently expect that the colleges and the universities will do much more than they are doing to prepare teachers for the secondary schools. There has been a good deal of a hiatus in our educational system right here. Teachers for the elementary schools are being very well prepared at the State normals and in the city normal training schools, but in very insufficient numbers. The breadth of the work in the normals is not equal to the demands of the secondary schools. On the other hand, the universities have given only inadequate attention to the preparation of teachers. Public sentiment would not sustain the expense involved in broadening the curriculum at the normals so as to meet the needs of the secondary schools, at least until the claims of the primary schools are more fully met. And the secondary schools are not going to be content with teachers without university training. The universities must meet the situation which the rapidly growing high schools have forced. It may be done without impinging upon the domain of the normals. Indeed, it may be best done by not imitating the normal plans. The practice school is well placed in the plan of the normal school: it seems to me it has very little place in the plan of a university. Because of situation, the experimental school of a normal makes some approach to

an ordinary common school; that of a university is much more exceptional. Methods are of much moment in an elementary school, but of less importance in a secondary school, and of little significance beyond that. The subject-matter pursued in a university, coupled with the substantial study of the science of education, comprises a better preparation for teaching the middle schools than is to be gained by much emphasis and drill upon methods. But the great educational system of the country must be the laboratory of the university department of education. It would be as logical to teach agronomy thru a few jars of selected soil in some back room, when you have an Illinois farm to do it with; about as rational to teach railroad engineering by setting up a wornout locomotive on a stationary platform in the basement of a city block and see the wheels go round, when you have the transportation system of the country to deal with, as it is to pursue the science of education on a university footing by studying a lunatic asylum, or a made-up school, when we have a real and universal educational system thru which to do it. I am now speaking of studying education as a science rather than of training teachers for the lower schools. A university college for the training of teachers of all grades stands on middle ground, but it will fall short if its most useful laboratory is not in the common schools.

I am sure the universities are anxious to be of all possible help to the schools below. Of course they are not agreed upon details, but they have purposes which are common, and in recent years they have grown in fraternal regard and in co-operative effectiveness. They may seem a little clumsy in the face of duties universities never dreamed of before, but, like everything else in this country, they are adaptable, and they will adjust themselves to the conditions and shoulder the responsibilities. Out of it all will come an educational system with greater solidarity, marked by more exactness of organization and more scientific arrangement of work, and moving upon a higher plane.

MORAL INFLUENCE OF THE UNIVERSITIES

There is another great subject in this connection which we have no right to pass by, *i. e.*, the moral influence of the universities upon their own students and upon the other schools. The country has the clear right to expect that the universities shall exert a distinctly moral, steadying, and uplifting influence upon the educational system. That they are leading the purely intellectual development of the country very thoroly, will hardly be questioned in any quarter. But there are many good people who think that we are facing national perils because religion is not taught in the common schools and all of our young men and women are not being trained in what are called the Christian colleges. Is there anything in this? The country just now seems to be passing thru an epidemic of irresponsible conduct, disorder, and crime, and there are those who would put the burden of this upon the schools moving under the leadership of the universities. Is there warrant for this thought? More than that, are the universities scoring up to the measure of their opportunities and their responsibilities, in generating spiritual life and developing moral character among their students and in the lower schools and in the nation?

It is, of course, not possible to discuss this great subject with any such thoroness as might be well at this time. But I have no desire to beg any one of these questions. Nor would I be disposed to offer dogmatic assertions or enter general denials and let it go at that. I must say what I may in a few brief sentences.

A university is not a show affair; it is not a specially dressed company of young people on their good behavior for an hour. It is a large crowd of real men and women in natural life. They have real ambitions and real passions. They are not under much restraint. Many are without restraint for the first time in their lives. Often they abuse their freedom; frequently they do things under the influence of the crowd which they would not do alone.

The general influences of a university make for versatility and resourcefulness, and stimulate the best ambitions and pur-

poses. The life is democratic and the talk free. Men are sized up quickly. Pretense and indirection do not go. There is no other free life in the world in which integrity and industry and generosity are so speedily and warmly recognized, or in which spuriousness or stupidity carries one so swiftly to the deeps. The sentiment of the crowd is as inexorable as the semester examination. This influence upon the individual is marked.

There is, ordinarily, a very high average, both in quantity and quality, of spiritual life in the university. If religion is a matter of living and of thinking rather than of preaching and parading, there is more of it under the roofs of a university than in any other miscellaneous assembly gathered from the respectable people of the earth. Here, too, the discussion is free, and youths who would hardly express their heart-life under other circumstances find themselves talking about matters that relate to it. Expression promotes growth. Cant is not taken seriously. Even religious dyspeptics sometimes have the kinks shaken out of them. Sectarianism is respected, but not accepted as the groundwork of religion. Creeds written in mediæval times and held too sacred to be analyzed or discussed are passed with more deference for their age than acknowledgment of their right to bind. And this does not promote free thinking, if by that is meant illogical thinking, or any thinking which does not accord with the common experiences of mankind and the truths which the progress of human knowledge has unlocked. All this makes the average of heart-life, as well as of mind-life, in a university exceptionally broad, unconfined, and true.

There are some special temptations in university life, arising out of the fraternal relations which are very warm among students, and out of the loyal purpose to support a "varsity" team in an intercollegiate contest; and sometimes these temptations are given too much opportunity by the very common, but inadequate, plan upon which a university is governed, or upon which a university crowd is left without government.

There is not much government in a university. The assumption is common, and it is justified, that when students come to

college they are men and women grown, and able to govern themselves. If one cannot do that with such aid as can be given him, he should be sent out of it. It is convenient for college presidents to know nothing of things which may be going on, but if the things spring from, or lead to corruption, may imperil others, or stain the name of an institution, it is weak or vicious to know, or to assume to know, nothing of them. The theory of the German universities, that all they have to do is to *teach* students without any reference to their morals, cannot widely obtain in America, for it is to be feared that the serious pursuit of study is not yet as uniform here as there, and moreover, the university purpose in America is the making of men even more than the making of scholars. It is well not to meddle with the ordinary plans and ways of young people, or, better still, to go with them in doing things so far as you are welcome, whether you are specially interested or not; but, on the other hand, it is a real satisfaction to the overwhelming number of young people, and it is a genuine public service, if some things are suppressed at the incipient stages by a power which is authoritative and not sleeping.

A saloon and a university have nothing in common, and if any student is uncertain about that he should be required to elect the one or the other. Drunkenness is a vice not permissible in the least measure in a university society. It is hard to keep university athletics straight and clean; and when success in great intercollegiate contests may be gained by letting corruption in, there is a temptation menacing university boys which calls for the big club of university authority. A college president with a benignant countenance and a meek and mild eye says that betting on athletic games ought to be discouraged. Of course it should. It is no better than betting on a horse-race; it undermines and overthrows character. It ought to be discouraged, *with a rifle*, so that it will take to the swamps and know enough to keep out of a university. Boys are to have such safeguards and helps as may be given them.

With a little more courage and energy of university action against the evils which are the special menace of the weaker heads thru the special circumstances of university life, there

is not much to be desired in the way of influences which combine for the upbuilding of well-rounded men and women in the universities of the country.

There is some menace to the secondary schools from their apparent proneness to copy phases of college life which are well enough with students of college age, but not good for boys and girls too young to go away from home; or from the disposition of children to imitate the evils rather than the virtues of their elders. Here is a large matter for the authoritites of the secondary schools to meditate, but as I have been determined to lecture none but the authorities of universities to-day, I will do no more than suggest it.

Answering the question, "Are the universities scoring up to their moral possibilities?" the reply must, of course, be, No, they are human institutions, and all such come short of their ideals, but the prevailing conditions are quite as favorable as could be expected at this early time in the development of our educational system; that the free life vital to the growth of self-reliant men is remarkably free from excesses, and that moral influences combine admirably in the great universities to develop resourceful and balanced character and train for useful lives. It may be added that in the further coalescence of the national system of education the moral power of the university must necessarily be very much more decisive than it has yet been.

It must have occurred to you in the course of this discussion that I have shouldered about as much of the burden upon the universities as they may fairly be expected to carry. I leave to your reflection that part of the load which justly belongs to the lower and the middle schools.

And in closing, what a splendid thing it is to have part in forming a national system of education. Our schools are not like those of any other country. We have much, very much, to learn from other schools, but our schools are not, and are not to be, like them. We are a people with a distinct individuality of our own, and our schools are to express and promote it. Our life is free, and our schools are to be free. The field is

open, and whoever will may occupy it. The power of the people will not interfere with individuals or institutions moved by sound purposes; but it will not wait upon personal fortunes or private enterprise. Nor will that power allow any great interest to be unfairly crowded out to gratify any local or selfish purpose. Our universities are not to be like other universities: they are not to adhere to external forms without much regard to scholarship; nor are they to seek scholarship without reference to character; they are to stand for both the truest character and the best scholarship; and they are to vitalize and guide the whole school system. We have all manner of schools, united by common bonds, and seeking great and very definite ends, which were in the minds of our fathers and are yet more clearly in our minds.

The other day as I was driving a distinguished Irish educator, a member of the Mosely Commission, about the grounds of the University of Illinois, he said, with unconcealed surprise, "And do you say that such work as this is supported by common tax upon all the people without complaint?" "Yes," I said, "the great tax for education is universal, and it is for universal education, and it is the only tax that is never objected to and never heard of." "Why," he replied, "this is a whole people educating a whole people, and to the very limits of human knowledge; it is something never heard of before; it is amazing." I have mused over it many times since. It is amazing. But even that is not all. It is being done not by king or minister or cabinet, but by the people themselves, upon their own impulse, and thru their own representatives, officers and agents. It is being done that all the people may be free and everyone have his chance. It *is* amazing. And it is a great opportunity to have even a small part in the evolution of such a unique and far-reaching national system of education.

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II

THE SUNDAY SCHOOL AS A FACTOR IN EDUCATION

In the common schools of the United States are enrolled nearly sixteen million pupils. Over thirteen million persons are enrolled in the Sunday schools. Are these institutions in any vital way related to one another? If they are, what part may the Sunday school reasonably be expected to perform in the work of education, and what features of interest does it present to educators? What should be done to correlate the Sunday school with the public school?

The relation of the Sunday school to general education depends on the meaning and object of education. On this matter experts differ widely. Dr. W. T. Harris, United States Commissioner of Education, believes that the principle of secular instruction and the principle of religious instruction "should not be brought into the same school, but separated as widely as possible." He says that "even the attitude of mind cultivated in secular instruction is unfitted for the approach to religious truth." [1] If the theory of Dr. Harris is correct, these two institutions must go their separate ways, without direct effort to aid each other. There seems to be ample evidence, however, that Dr. Harris represents a minority.

Professor George A. Coe of Northwestern University holds that "true education must develop all the normal capacities of the mind; religion is one of these normal capacities; therefore true education includes education in religion." He would affirm "with all the authority of the history of the race, with all the authority of sound observation and analysis, that religion is an essential factor of the human personality, and that, therefore, a place must be found for religious education within general education." [2] Professor E. D. Starbuck of

[1] Article in New York *Independent*, August 6, 1903.

[2] Religious Education Association, Proceedings of First Annual Convention, p. 45, 47.

Leland Stanford University insists that "the feeling of the unity of life must lead us to feel the weakness of the distinction between secular and religious education. The end of all education must center in the deepest and highest product of development—the spiritual life." [3]

If education is regarded as a disciplinary process to make human beings more efficient machines in the complex enginery of competitive business, and fitted by more thoro acquaintance with men and things to live in the social organism, religion may be left out of the account. But if education is, as President Butler of Columbia University teaches, the adaptation of a person to environment,[4] religion being an essential part of that environment, then the Sunday school should be an important factor in American education; for the work assigned to it cannot be undertaken by our public-school system, which is practically certain to be permanent. No other country having so diverse elements of population intrusts its government to so large an extent to all its citizens. The public school is the unifying factor without which our democratic government probably could not exist. The school must be undenominational, and in most sections, under present conditions, it cannot admit any formal religious instruction.

This nation, then, because of its democratic system of government and its heterogeneous population is in the anomalous position that essential principles which are historically and actually part of its life cannot adequately be taught to its children in the schools which it maintains. For Christianity is admittedly an element in the common law of the United States. This work must be done by other means.

The only institutions in which religion can be taught are the home, the church, the Sunday school, and the schools and colleges supported by religious denominations or as private enterprises. The latter include only a small and not increasing proportion of children and youth. So far as home training is concerned, President Salisbury of the Wisconsin State

[3] Religious Education Association, Proceedings of First Annual Convention, p. 54.

[4] *Principles of religious education*, p. 4, 5.

Normal School probably gives a conservative estimate when he says that there is "not one home in ten that is doing anything in definite religious education of children." This would be true, according to estimates of those extensively acquainted with our city and country life, even if it were limited to homes of educated people. A suggestive illustration is just now before me. It is a list of books used by a father for the home reading of his children for each year of their lives up to the sixteenth. It was prepared for a religious newspaper by a gentleman of culture connected with a prominent firm of book publishers. He says, "It seems to me to contain all the great books which every child should love to read." But the only volume mentioned which directly suggests religious truth is Bunyan's *Pilgrim's progress,* and that is assigned to one of the earlier years with the explanation that it may safely be included because the theology in it will make no impression. Multitudes of children, however, are not only outside of Christian homes, but practically are without all educating influences of home life. The church reaches directly a decreasing number of children every year thru any other service than the Sunday school.

These things being premised, those who regard religion as essential to the development of character fit for American citizenship, are compelled to recognize the Sunday school, whatever its defects, as a partner of the secular school. And any movement for its improvement must begin with things as they are. Academic discussion by professional educators of ideal as contrasted with actual Sunday schools, to the disparagement of the latter, only serves to widen the breach between the secular and religious education and to influence the better class of teachers to let Sunday schools alone.

What, then, is the present situation? We have 153,246 Sunday schools in the United States and Canada, more or less loosely organized as an International Association, tho technically only a convention, but so far united under devoted and experienced leaders that they can be influenced and guided in their common work to a considerable extent. The Secretary of this Association reports that the average membership of

these schools is eighty-five, and that the average Sunday school meets in one room. The majority of these schools have less than fifty members each. The pastor and the superintendent, as a rule, have had no special training in school administration. There is a proportion, reaching as high as twenty per cent. in some sections of the country, of teachers educated in training schools and colleges, but this is exceptional. A sufficient number of teachers in public and private schools, however, are engaged in Sunday-school work to make it possible to introduce modern methods in many places. But the teachers' meeting, the training class, and grading are practically unknown in the average Sunday school. It includes all ages, but most of its members are children, and young children predominate. The best work is usually done in the primary classes, and the teachers best qualified and most ambitious to improve are likely to be found there.

The attendance is voluntary, the members are not amenable to thoro discipline as to regularity, promptness, arrangement in classes, or systematic work. The school is limited to one hour in the week, in church schools usually preceding or following the Sunday morning service. The evangelistic aim prevails over the educational and the teacher's motive is not so much to impart exact truth as to use truth, and to represent that to be truth, which will move the pupil to public profession of faith in Christ and to habits of conduct which the teacher believes will best promote lives consistent with such profession.

The International organization extends down to townships and local districts, and up thru State and provincial associations to the triennial convention. Quarterly and annual meetings are held in such numbers as to reach more or less directly the great majority of the schools thru their delegated representatives. The leaders of this organization are of all degrees of fitness as educators, but the proportion is far too small of those who lead in secular education. They give freely, however, what they have to give of time and service for love to God and their fellow men and because of their conviction that the Sunday school is the best instrument they can find to develop Christian character in its members.

The International system of lessons is probably used by about ninety per cent. of all Protestant Sunday schools. It has not been adopted extensively by Episcopalians except in Canada. It is not acceptable to Unitarians, who have a good system of their own, but in most of the larger denominations it is nearly universal. This system was introduced in 1872 and at once gained popular favor. It consists of Scripture passages of about a dozen verses each, one passage for each Sunday, selected by a committee of American and British members representing several denominations. These are mainly historical and biographical portions of the Bible, following one period consecutively from six months to a year and a half, alternating between the Old and New Testaments. Two or more verses in each lesson are indicated to be committed to memory, related passages are suggested for reading or study, and a golden text is given which is supposed to represent the most prominent truth in the lesson. The committee is careful to choose titles theologically colorless as far as possible. These lists are the only publications issued by the lesson committee. Only one topic with one text is chosen for each Sunday for all classes and ages. These lesson lists are printed nearly two years in advance. Those for 1905 were issued early in 1903. The plan provides for traversing the Bible historically, from Genesis to Revelation, in six years. Three and a half of the six are spent in the New Testament, two and a half of these in the Gospels and one year in the Acts with a few lessons from the Epistles. The life of Christ is surveyed three times in the six years.

These lists are placed in the hands of editors and lesson writers, and the results of their work appear in annual volumes, quarterly and monthly magazines, weekly leaflets and newspapers. The lessons are arranged in periods of three months each, the last Sunday in each period being taken for a review. A lesson intended to teach the evils of drinking intoxicating liquor is interjected into every quarter.

The value of these lessons depends of course on the ability of those who prepare them for use, all taking the same Biblical material. Many able scholars and educators in this

country and Europe are employed in their preparation. The competition of undenominational publishing houses compels the different denominations to secure the best available talent, and to furnish its text-books and leaflets at the lowest prices. Many millions of them are issued and no other literature on any one subject is so extensively circulated and used as these lessons on the Bible.

The most patent advantages of this system are the bringing together of persons of many denominations in a common purpose and study, the stimulus from the sense of co-operation, the union in homes, churches, and communities of those interested in one theme, the employment of the ablest minds in interpreting the Scriptures and applying their meaning to present-day life and conduct, and in acquainting these voluntary teachers with some of the modern methods of teaching. The most obvious defects of this system are its fragmentary treatment of the Bible, its want of adaptation of subjects to pupils of different degrees of maturity, its somewhat mechanical arrangement of topics, the lack of progress in themes and methods, and the disproportionate emphasis on homiletic aims. As a partial remedy, outlines of a two-years' course of lessons for the youngest children have been prepared by the committee, and this course was allowed, tho not recommended, by the last International Convention. A proposition for Advanced Courses was rejected, but is almost certain to be adopted by the next Convention, which is to meet in Toronto in 1905. Those who have been over the regular course once or oftener, who wish to continue with the organization, will not be denied the privilege of taking up new studies. Some of the most important portions of the Bible as well as its own history and structure are left untouched by the present system of lessons; and the progress of Christianity since the times of the Apostles will not continue to be ignored in the Sunday school.

These being the conditions, what can be done to make the Sunday school a more efficient factor in general education? What service can be rendered to it by those who regard religious knowledge and culture as essential to American man-

hood and womanhood? No one who has attended the annual meetings of the National Educational Association, especially the last one, held in Boston last summer, can doubt the pervading purpose of the great corps of American teachers to develop the moral and spiritual powers of the millions of children and youth committed to their care. Nor will any generous mind deny that this purpose is controlling in those of every section and every church, Roman Catholic as well as Protestant. Broadly speaking, a religious character is essential to make the teaching office attractive and to lead to success. Enthusiasm for teaching must be moral as well as intellectual, and is at its best in those who see the highest spiritual possibilities in their pupils.

Such teachers, without doubt, will welcome practical suggestions as to how those interested in general education may bring the Sunday school into closer relations with what they regard as the most important of all work, the development of the whole being—physical, mental, moral, and spiritual—of American children and youth. Among ways of bringing about this co-operation it seems to me that the most prominent are these:

1. Encourage the best class of Sunday schools. The ideal as proposed by some educators requires college professors for managers and teachers, assured continuance in attendance for a term of several years, graded departments and text-books, periodical examinations and promotions, separate rooms, and considerable study outside of school hours. Such schools must be rare, but each one of them helps to lift the standard for the whole number, if its promoters are in sympathy with all honest efforts for religious education. The Baptist Sunday school of Hyde Park, Ill., is one of the best examples of this class. President W. R. Harper of the University of Chicago has been for several years its superintendent, and its directors, with a number of the teachers, are professors in the University. The work has resulted in an excellent volume of discussions of principles and practical suggestions by two of its officers.[5]

[5] *Principles and ideals for the Sunday school*, by Professors Burton and Mathews, University of Chicago Press.

In communities which include colleges and universities there should be as many thoroly organized Sunday schools as are possible, and these may be centers from which religious university extension may affect large sections of the country. Some of the foremost educators in higher institutions of learning are engaged in this work, and their influence is constantly increasing to promote respect for Bible study.

2. Give due honor and a helping hand to the average Sunday school. Some millions of children meet in Sunday schools where the superintendent and teachers have known only the rudiments of education. They are not capable of arranging for themselves a system of lessons. They would not be able to use any system selected for them except the simplest. The International lesson is probably the best for them that has thus far been produced. These schools have been made the target of much unsympathetic criticism, especially by professional educators. Others have followed their example, sometimes apparently to show their own familiarity with the principles of modern pedagogy. These teachers are said to have "no conception of the organic unity and progressive unfolding of divine revelation." Their efforts are described as "feeble exhortations based on vague moralizing." It has been often said that it would be better to have no Sunday schools, than to put the responsibility for training human souls into the hands of so incompetent persons.

Such criticism avails to scare away from Sunday schools some earnest men and women whose impulses are strong to help others to nobler living. But it does nothing to put in their places teachers with expert knowledge. The religious education of youth can no more be limited to persons who have graduated from normal schools than motherhood can be limited to women who have received scientific training as nurses. Perhaps the first step in popularizing general education is to bring those who know little of it to respect the calling of the teacher by showing them what good teachers have accomplished. Not less important is it to bring the professional teacher to respect the moral influence of good men and women without educational equipment who undertake

definitely to inspire noble character in others. A recent volume on religious education has this impressive passage: "This intangible but very real quality which is imparted to one's teaching by the spirit and motive with which it is undertaken, this atmosphere which is created by the fact that the teacher's work is undertaken with prayer and carried forward with the supreme desire to render his pupils a real religious service, is the most important part of his work." To demonstrate the value of truth in life so as to make the pupil feel the presence of God as its author, is not an art which can be learned in a training school. It is the exercise of Christian manhood; and it entitles even an ignorant man to the respect of professional teachers and to a fraternity of sympathy.

An inviting opportunity, then, is afforded to teachers of public schools, especially in country districts, to teach in the Sunday school. They are working with the high aim of making the best citizens. Here they can secure an influence over their pupils on Sunday which will be felt every day in the week and make all their work in the secular school promote the noblest end. It is not an excuse from Sunday school, but a reason for entering it, that they are competent in their profession and are engaged in teaching during the week. No class can do so much to advance religious education as the teachers in the public schools. No one thing will do more to promote this advance than to bring into view the elements in the average Sunday school which deserve the respect of religious people, and to increase their excellence.

3. Foster better methods of study. Give the International system of lessons full credit for what it has done and is doing. But an increasing number of schools are capable of a better system. The Blakeslee lessons are in some respects an improvement, tho they fail to fulfill all the claims of their author. They offer graded Scripture texts, the treatment of which, by expositions, questions, and applications, is similar to that given by lesson writers to the International texts. The American Institute of Sacred Literature has done admirable work for pastors, teachers, and students in academies and colleges. But its text-books assume too great knowledge of average boys and

girls and require too much work from them to be popular. The International Committee of Young Men's Christian Associations has come nearer to the common man. It has issued a number of volumes of high value, of which Professor Bosworth's *Studies in the Acts and Epistles,* and Dr. W. W. White's *Studies in Old Testament characters* are good examples. Several individual scholars have recently given the public results of their studies in the Bible which they have used in classes. Among these Dr. A. S. Aglen's *Lessons in Old Testament history* and Alford A. Butler's *How to study the life of Christ* are excellent illustrations, tho others of equal merit might be named. But the field is far from being covered. The readjustment of religious learning to new discoveries in science and historical research has so far progressed that modern treatment of the Bible and of ethics from the Christian point of view provokes comparatively little irritation. New text-books are in demand which relate what is studied in the Sunday school to what is studied in the public school. Every student in every department of knowledge is learning what may be made in part the basis of right conduct, of unselfish service of our fellow men, and of personal responsibility to God.

Moreover, series of booklets are especially needed which present simply and directly the subjects treated, are popular in form, inexpensive, and of convenient size to be carried in the pocket. Literature for teachers is more varied and abundant than for pupils. One of the objects of the Religious Education Association, which is to hold its second annual meeting in Philadelphia the first week in March, is to encourage the production of this kind of literature and to commend what is valuable to the public. The membership of teachers in this Association and their active co-operation are very desirable.

4. Help to make the church a school. Back of preaching and of all religious work there must be knowledge—knowledge of the things preached about and of the reasons and motives for doing the work. St. Francis de Sales said that "The knowledge of the priest is the eighth sacrament of the Church." The saying should be broadened to include the whole con-

gregation. There is too much preaching and too little teaching. Here is one reason for the widespread decline in church attendance. The people are not eager for lectures on subjects concerning which they have little or no knowledge. Phillips Brooks made a discovery which deeply impressed him when he first entered a theological seminary. The first class exercise he attended was a prayer meeting of the students. He was so moved by the exaltation of soul and the devout earnestness manifested that he sat silent, ashamed and depressed at his own coldness. The next day he went into a Greek recitation with the same students. There he found that they had not apprehended the first principles of conscientious study. "The boiler had no connection with the engine." Their fervor expressed itself in pious aspiration to preach. Such zeal expends itself and dies as soon in the layman as in the minister. Horace Bushnell said that the preacher's world consists of grown-up people only: "and preaching only to those, who are scarcely more than half the total number, it is much as if we were to set our ministry to a preaching only to bachelors. We dry up in this manner, and our thought wizens in a certain pomp and pretense that is hollow, and not gospel."

The recovery by the American people of the sense of the supreme value of the worship of God and obedience to him, which is necessary to a genuine reverence for humanity and to stable government and orderly society, requires knowledge of God and of religious truth gained by systematic, patient study, with classes, teachers, and text-books. This means a reconstruction of church services and of current ideas of the business of pastors and church members. First of all the minister is called to be what Jesus Christ said he preferred to be called—the Master. He used precisely the term which we apply to the head of the public school. The pastor should be not only a teacher, but a master with knowledge and skill to organize and conduct the church as a school. This means a definite preparation in knowledge for membership in the church and definite instruction of those in it as to their privileges and duties. It means the systematic training of teachers, larger and fewer classes in the Sunday school, a grading of classes

so far as practicable, plans to encourage and guide pupils in study out of school hours. The influence of colleges on theological seminaries, the demands of educated men and women in the churches, and their hearty co-operation in carrying on the church as a school, will do much to produce an adequate supply of ministers who are qualified to be head masters.

5. Foster the union of Sunday schools in local communities, especially of adult classes. Often one competent teacher is willing to take a large class, who would refuse to devote his time and strength to a small and uncertain one. In many communities Christians of different denominations are so far agreed as to what shall be taught that they are ready to study together. When adults come to know one another in a common classroom, they are being prepared to bring their children together for the same purpose. It would be a distinct advance for religious education if churches in the same town and in substantial agreement would unite in training teachers, arranging plans of study, lectures, etc., for their Sunday schools as the school committee arranges matters for the public schools.

6. Support and work with the International Sunday-school Association. Valued at its lowest terms, it is unsurpassed by any other international organization for teaching the fundamental principles of Christianity to the children and youth of the nation. It enlists in constant service nearly one and a half millions of teachers. Most of them are moved by high aims and an unselfish ambition to do better work, and many of them are eager to learn what the leaders in secular education can teach them for applying modern ideas of instruction in their field. The closer they can be brought together in interest and work and into touch with the educating forces of the country, the more thoroly will Christian truth be intelligently accepted by the people.

For the sake of the true ideal of education, which is held by most of the leaders of secular learning, a much larger proportion of these leaders ought to identify themselves with the Sunday-school organization. To one who has attended the triennial Sunday-school Conventions of the last twenty-five

years the first meeting of the Religious Education Association in Chicago last February presented a marked and almost painful contrast to the Sunday-school Convention at Denver the previous summer. The Chicago Assembly was made up in large part of presidents and professors of colleges, universities, and theological schools. It is safe to say that less than one per cent. of that company were seen at Denver, nor was the Denver meeting better represented at Chicago. This indicates an aloofness between those who are laboring for the religious education of the people and those who are working for their secular education, including even those who are training religious educators, which is no more creditable to one party than to the other. It is not a reasonable excuse for the latter to say that Sunday-school leaders are prejudiced against modern views of truth now generally accepted in the schools. The church and the school need each other's co-operation and support. Neither can maintain its prestige permanently without the other. The points of contact between them are increasing, while they will remain in this country free from any formal alliance. Each should respect the other. At present the church is more disposed to honor the school than the school is to honor the church. Those in both who have faith in God and are disciples of Jesus Christ our Lord are in duty bound to stand together for the complete education of all the children and youth of our country.

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Boston, Mass.

III

PHYSICS AND CHEMISTRY IN PRUSSIAN AND AMERICAN SCHOOLS

Having been asked by the editor to write for the EDUCATIONAL REVIEW an article, "comparing, as to method, time allotment, and content, the instruction offered in physics and chemistry in the secondary schools in France and Germany with the secondary-school work in those subjects in this country on the part of institutions which plan to meet the requirements of the College Entrance Examination Board and of Harvard College," I find that I can, so far at least as Germany is concerned, get far on with my task by translating the new (1901) *Lehrpläne und Lehraüfgaben für die höheren Schulen in Preussen,* as they are given in the *Zeitschrift für den Physikalischen und Chemischen Unterricht,* vol. 14 (1901) p. 249-253. It is true that much of what is here transcribed does not relate directly to physics or to chemistry; but all of it will, I think, be interesting to the many who are concerned with the general problem of the correlation of science teaching in schools; and, moreover, in some cases we are not told by the Prussian authorities just how much time is to be given to physics and chemistry, but only how much time is allotted to various sciences, including these two. It appears, and is in fact expressly stated, that some degree of freedom is left to the individual schools in the division of time among the sciences to be dealt with.

It may not be entirely superfluous to say that the nine years of the full course in each of the three classes of schools to be considered, the *Gymnasien,* the *Realgymnasien* and the *Realschulen,* are designated as follows, *sexta,* or VI, which the boy enters when about nine years old, *quinta,* or V, *quarta,* or IV, *untertertia,* or U III, *obertertia,* or O III, *untersecunda,* or

U II, *obersecunda,* or O II, *unterprima,* or U I, *oberprima,* or O I.

A. GYMNASIUM

(*a*) *General scope of instruction*

Botany: Knowledge of the most important families of the natural system and of the vital phenomena of their representatives, and of the most frequent plant diseases and their causes. The most essential things in the morphology, anatomy, and physiology of plants. *Zoölogy:* Knowledge of the chief orders of the classes of vertebrates as well as of particular representatives of the other classes of the animal kingdom. Knowledge of the structure of the human body and of the principal laws of hygiene. *Mineralogy:* Knowledge of the simplest crystal forms and of some especially important minerals. *Physics:* Knowledge of the most important phenomena and laws of the various provinces of physics and of the fundamentals of mathematical geography and astronomy. *Chemistry:* Knowledge of the simplest chemical phenomena.

(*b*) *Topics of instruction* [*Lehraüfgaben*]

VI, two hours a week. Description of flowering plants at hand and discussion of the forms and parts of the roots, stems, leaves, flowers, easily perceived forms of inflorescence, and fruits. Description of important mammals and birds, with reference to external markings and to characteristic details of the skeleton (according to specimens or representations at hand), with comments on their mode of life, their uses and their depredations. Exercises in simple schematic drawing of the thing observed, as in the following classes.

V, two hours a week. Thoro examination of the external organs of the flowering plants, in connection with the description of observed specimens and with the comparison of related forms. Description of important vertebrates (according to specimens or representations at hand), with comments on their mode of life, their uses, and their depredations. Main features of the bony structure in man.

IV, two hours a week. Description and comparison of

plants with obscure flower structure. Survey of the natural system of flowering plants. Articulate animals, with especial attention to insects.

U III, two hours a week. Description and comparison of certain needle-bearing trees and cryptogamic plants, discussion of the more important foreign useful plants. In connection with these, a survey of the whole natural system, the most essential things in the anatomy and physiology of plants, as well as something on plant diseases and their causes. Lower animals and a glance over the animal kingdom.

O III, two hours a week. Study of the structure of the human body. Instruction in hygiene. Preparatory lecture-course I in physics: Simplest phenomena of the mechanics of solid, liquid, and gaseous bodies, as well as of heat, in experimental treatment.

U II, two hours a week. Preparatory lecture-course II in physics: rudiments of chemistry, with discussion of some important minerals. Simplest phenomena of the science of magnetism and electricity, in experimental treatment. In those institutions which have arranged a substitute for Greek, or from which, as a rule, a large exodus occurs at the end of the *untersecunda,* the body of instruction is to be supplemented (in the first-mentioned institutions by way of substitution) by the treatment of simple phenomena in acoustics and optics.

O II, two hours a week. Science of heat with applications to meteorology. Magnetism and electricity, especially galvanic action.

U and O I, two hours a week in each. Mechanics, with applications to heat (mechanical equivalent of heat), mathematical geography, and astronomy. Wave motion, acoustics, and optics. Repetitions and additions with regard to the whole field.

B. *Real*GYMNASIUM AND *Oberreal*SCHOOL

(*a*) *General scope of instruction*

Botany: Knowledge of the natural system, especially of the most important families of the native flowering plants, of certain cryptogamic plants, and of the most important foreign

useful plants; acquaintance with their geographical distribution; knowledge of the life phenomena of the plants dealt with, and of the most frequent plant diseases and their causes. The most essential things in the morphology, anatomy, and physiology of plants. *Zoölogy:* Knowledge of the system of the vertebrate animals and of the invertebrates; acquaintance with the mode of life and the geographical distribution of the most prominent animals, knowledge of the structure of the human body and of the principal laws of hygiene. *Mineralogy:* Knowledge of the most important crystal forms, as well as of the physical properties, chemical composition, and the geological and industrial significance of the chief minerals. *Physics:* Sound [*sichere*] knowledge of the most important phenomena and laws of the various provinces of physics, as well as acquaintance with the mathematical statement of the chief laws, knowledge of the weightiest doctrines of mathematical geography and astronomy. *Chemistry:* Knowledge of the chief elements and of their principal compounds, especially the inorganic compounds, as well as of the fundamental principles of chemistry. In the *oberreal*school, in addition, an extended treatment of organic chemistry.

(*b*) *Topics of instruction*

VI, two hours a week. As in the gymnasium.

V, two hours a week. As in the gymnasium.

IV, two hours a week. Comparative description of related kinds and species of flowering plants (according to specimens at hand). Reference to the Linnæan system. First exercises in identification. Repetitions and extensions of the zoölogical teaching of the earlier classes with reference to the system of the vertebrates.

U III, two hours a week. Description and comparison of plants with developed flower structure and of some cryptogamic plants. In addition, a broadening and deepening of the morphological and biological conceptions. The main families of flowering plants. Survey of the natural system. Exercises in identification. Articulate animals, with especial attention to insects and their orders.

O III, two and four hours a week, respectively [two in the *real*gymnasium, four in the *oberreal*school]. Summary review of the preceding matter relating to natural history. Lower animals. Survey of the animal kingdom. Preparatory lecture course I in physics: The simplest phenomena of the mechanics of solid, liquid, and gaseous bodies, as well as of heat, in experimental treatment. In the *oberreal*schools are added: extensions and re-enforcements of the botanical and zoölogical instruction, with reference to morphology, biology, and systematology, as well as to the geographical distribution of plants (especially domestic and foreign useful plants) and animals. Continued exercises in the identification of plants.

U II, four and six hours a week, respectively. The most essential things in the anatomy and physiology of plants. Something on plant diseases and their causes. Anatomy and physiology of man. Instruction in hygiene. Preparatory lecture course II in physics: The simplest phenomena of the science of magnetism and electricity, of acoustics, and of optics, in experimental treatment. Preparatory lecture course in chemistry and mineralogy, in the *real*gymnasium in connection with natural history and physics, in the *oberreal*school in separate lecture hours.

O II, five and six hours a week, respectively. *Physics:* Heat (with omission of heat radiation), magnetism, and electricity, especially galvanic action. *Chemistry:* Formal introduction to chemistry. Outlines of the atomic theory. Chemical formulas. U and O I, five and six hours a week respectively in each.[1]

Physics: Mechanics, with application to heat (mechanical equivalent of heat), and to mathematical geography and astronomy. Wave motion, acoustics, and optics, radiation phenomena of heat and of electricity, repetitions and additions with regard to the whole field of physics. *Chemistry:* Systematic treatment of the most important elements and the most noteworthy compounds, including some of the organic, extension of the theoretical portions, stoichiometric calculations,

[1] That is, five hours a week for physics and chemistry together in the *real*gymnasium in each year of the *prima;* six hours a week in the *oberreal*school.

elements of mineralogy and crystallography, simple exercises in the laboratory. In the *oberreal*school, in addition, some connected portions of organic chemistry.

c. *Real*school

[As the course is identical with that of the first six years of the *oberreal*school, it is unnecessary to give details here.]

Official comments for the natural sciences

1. In the instruction in the natural sciences the accumulation of a sum total of various kinds of useful knowledge, however valuable in itself this may be, is not the final object sought, but is only a means for the advancement of general culture. The pupil must learn to use his senses aright and to describe aright the thing observed; he must gain an insight into the orderly connection of natural phenomena and into the significance, for life, of the laws of nature; he must also, so far as this is possible in school, learn to understand the ways by which the knowledge of these laws has been and can be attained. Seeing and trying have to occupy a large place in the instruction.

2. The instruction in botany and zoölogy has, from the beginning thru to the observation and description of particular plants and animals, to lead the pupils gradually on by comparison of related forms to the possession of the main conceptions of morphology and to the knowledge of the system, and at the same time to make them acquainted with the most important phenomena and laws of animal and plant life. The emphasis is thruout to be placed, not so much on a great compass of subject-matter as on its thoro working out for the purpose of instruction. . .

3. [Relates to the division of the school year for purposes of instruction in botany and zoölogy.]

4. The instruction in anthropology in the gymnasium can be accomplished in a quarter of a year, if it is limited substantially to the anatomical side, while the physiological gives way to the physical-chemical instruction. To this end it is neces-

sary in one of the upper classes (most advantageously in I) to take for a physiological course a part of the hours assigned to physics instruction.

5. The instruction in physics and chemistry, together with mineralogy, is divided into two courses.

(a) In the first of these courses, which commonly occupies the O III and U II, only the simplest matters, those best adapted to the understanding and the interest of the pupils in these grades, are to be dealt with. In this thruout, experiment, but in its simplest form, has to serve as the foundation; moreover, wherever possible, the pupil's own experience is to be used as the starting point. Election is limited to the parts designated in the Topics of Instruction. In the *real*institutions as well as in the gymnasium, in this course, the elements of chemistry are to be treated in an introductory way only, since in the second course, beginning with the O II, especial hours are assigned for the chemical-mineralogical instruction. The division of the four hours in the U II of the *real*gymnasium between natural history [*Naturbeschreibung*] and physical science [*Naturlehre*] is left to the individual institutions. Moreover, in special circumstances, particularly in institutions not having a full course [*Nichtvollanstalten*], another apportionment of the natural-science matter to the two classes O III and U II is permissible, provided that thereby the Topics of Instruction in the classes mentioned suffer no abridgment. In the *oberreal*school a separation of the physics instruction from the chemical-mineralogical exists from the beginning.

(b) In the second course, which is based on the first, the knowledge there gained is to be deepened and broadened. In this grade also experiment is an essential element of the instruction; but in contrast with the under grade, where it has a more qualitative character, it will here, especially in the *real*-institutions, be turned more in the quantitative direction. Here comes in the mathematical treatment of the chief laws; the instruction in theoretical optics (especially in the lore of polarization and double refraction) must be limited to the most important phenomena. Of mathematical geography and astronomy, the fundamental parts are to be dealt with in the

mathematical hours, so that only the extension of the knowledge there gained shall be incumbent upon the physics instruction. In this course also, where peculiar conditions recommend it, the topics of instruction may be shifted from one class grade to another, provided only that the total purpose is safely accomplished.

(c) The instruction in mineralogy is most naturally joined with the chemical instruction. This does not forbid that in especial circumstances, in institutions, for example, which lie in a mineral-bearing, mine-working region, some special attention shall be paid to mineralogical instruction. The matters to be dealt with are the most important crystal forms and the physical and chemical properties of the chief minerals, and in the *real*institutions the elements of geognosy and geology. In chemistry care must be given to this, that the pupil be not, thru indiscriminate treatment of all the elements and their compounds, overburdened with subject-matter and forced to getting things mainly by memory. So far as possible, the technical application of chemical as well as of physical science shall receive attention. Furthermore, it is advisable to take into account, not merely important hygienic considerations, for example, in the discussion of water, air, and food, but also the connections with biology. In the practical exercises the pupils are to go thru the most important reactions of the metalloids and metals, carry out simple qualitative analyses, and make easy preparations. Exercises of the same kind, which under proper direction have an educational value not to be despised, are under circumstances permissible even for the province of physics instruction.

6. With the great abundance of material in every field and with the comparatively small number of study hours available therefor, especially in the gymnasium, the greatest care must be given to making a proper selection. The endeavor of the teacher is to be directed before all to the end that the pupil be trained to observe and think for himself; all overloading with matter to be acquired by memory is to be avoided. Heavy home tasks are to be imposed only in the upper classes of the *real*institutions, at most four a week.

It appears from these official plans and instructions that in Prussian schools the biological studies, botany and zoölogy, are taught in a way suggested by the term "natural history." No student exercises (*Ubungen*) in these sciences are prescribed for the gymnasium and in the *real*institutions such exercises do not go beyond practice in the identification of plants. Taught in this way, botany and zoölogy naturally precede the study of physics and chemistry in Prussian schools, as they doubtless still do in most American schools, in spite of some endeavor to put them on a more ambitious basis requiring some previous acquaintance with physical science. The practical purpose, which is seldom quite lost sight of by German idealism, is here observable in the requirement that some attention shall be given to the most common diseases of plants.

Anatomy, physiology, and hygiene come near the end of the natural history and the beginning of the physics, when the boy is about fourteen years old, and are, apparently, disposed of in about one week-hour thru one year. Insistence on "temperance" teaching is not to be found in the Prussian official documents.

In the gymnasium the natural-history studies and the study of the human body occupy, taken all together, the same number of week-hours as the physics and chemistry; but, as the latter come in the later years of the course, they must be regarded as getting more of the pupil's strength. In the *real*institutions physics and chemistry receive an absolutely and relatively still larger share of his attention.

Physics is begun before chemistry; but after a time the two studies are carried on together; that is, during the same year or years. Mineralogy is taught under the head of chemistry; but even with this arrangement chemistry apparently is given less time than physics, especially in the gymnasium, where with its "discussion of some important minerals," it seems to occupy in all not more than one week-hour for one year; while in the same institution physics, with some attention to mathematical geography and astronomy and to mineralogy, has some eight week-hours in all. This is, probably, rather

more time than is commonly given to physics in good secondary schools or college preparatory schools in this country.

In the *real*gymnasium physics and chemistry together have about eighteen week-hours; and in the *oberreal*school they have about twenty-one week-hours. Just how these totals are to be divided between the two we are not told, and in this particular it is likely that somewhat different practices prevail in different schools. In this and in other matters of detail it is evidently the policy of the educational authorities to leave considerable freedom to the schools.

The scope, or content, of the chemistry instruction in the *real*gymnasium appears to be not very different from that indicated by the College Entrance Board's definition of the requirement in chemistry. The description, "knowledge of the chief elements and of their principal compounds, especially the inorganic compounds, as well as of the fundamental principles of chemistry," would serve well as an abridgment of the "definition" given by the board. Furthermore, the laboratory work prescribed for pupils in the *real*gymnasium appears to be (see Official Comment (5) c) much like that recommended by the board. Apparently, the *real*gymnasium gives rather more time in the aggregate to chemistry, including mineralogy and crystallography, than the average good American secondary school; but in chemistry proper it would appear that these two classes of institutions attempt very similar ends by very similar means. The *oberreal*school gives, in addition, considerable work in organic chemistry, which probably has little counterpart in American schools. It has already been shown that the chemistry of the classical gymnasium is very slight.

The manner and the matter of the physics teaching may well be considered together. Laboratory exercises in physics, if not quite unknown in the Prussian secondary schools, are unrequired by the general law. This fact, taken with the condition that more time is given to physics in Prussian schools, even in the classical gymnasium, than in most American secondary schools, makes it possible for the former to take up matters which the latter must leave untouched, for example, (see Official Comment (5) a) polarization and double defrac-

tion of light and something of mathematical geography and astronomy. A German text-book of physics for the higher schools is in marked contrast with American school text-books in the same subject. For example, Jochmann's *Grundriss der Experimental Physik* contains in its 13th edition (1896), so far at least as my rather hasty examination has shown, no directions for or reference to laboratory work by pupils, no "problems," no questions even. It is as purely and dryly informational as a dictionary, and it makes free use of trigonometry. The ordinary American schoolboy of seventeen years could or would do nothing with it. Even the German schoolboy, it appears, is not required to "recite" from such a book. Russell, in his *German higher schools,* describes the prevailing method of teaching physics in such schools somewhat as follows: The teacher, always a man and usually well equipped for his work, gives experimental demonstrations in the presence of his class, with an accompaniment of oral explanation and of questions addressed to the pupils. The latter take notes on the demonstrations, which notes they afterward elaborate with the aid of a text-book. They are questioned on the work which they have written up, and their notebooks are examined.

In trying to estimate *a priori* the results of such a method of instruction we must not forget that the ambition, hope, and pride of a German boy, and of his family for him, lie in his success as a scholar. There seems to be no good reason to doubt that he gets, in any of the higher schools of his country, a very considerable and very useful knowledge of general physics. On the other hand, one would expect to find, and the testimony of Americans who have studied abroad is to the same effect, that in general handiness and in acquaintance with laboratory apparatus and methods, the German student is very deficient when he enters the university. But his general knowledge of physics and his training in mathematics are such, and his habit of steady effort is so fixed, that after a year of all-around laboratory work, the *practicum,* he begins some special research with good hope of success.

There is good reason to believe that the physics teaching in

German higher schools is excellent in its way. The very existence of such a journal as the *Zeitschrift*, from which I have copied the *Lehrpläne*, and from which I shall make other extracts in the course of this paper, is enough to show that the demonstration side of physics teaching has been and continues to be admirably developed in Germany. This periodical is issued six times a year, each *Heft* being some sixty or seventy pages. It is well printed and well illustrated. It is devoted, as its title implies, to the betterment of instruction, but in a broad way. It publishes continually suggestions for the improvement of long-familiar apparatus and experiments; for example, those relating to the laws of falling bodies. It takes up the latest important discoveries, and gives methods of making the results of such discoveries visible and tangible to pupils. It seeks for simple and striking illustrations of all the great laws. It publishes reports of scientific meetings, especially meetings in which the teaching of science is discussed. It discourses ably on current educational topics relating to physics and chemistry. It reviews many new books, American books included, intelligently and appreciatively. It does, in short, about everything which a journal or review can do to inform and strengthen its readers in the knowledge and practice of their profession. It is such an organ as the teachers of science in this country ought in time to make of the very promising beginning which we have in *School science*.

It is important for us to notice not only current practice, but current tendencies, in the German treatment of instruction in physics. Are the Germans likely to give their boys laboratory exercises in physics in the secondary schools? Are they working in that direction, and if so, what is likely to be the character of the outcome? Russell gives an intimation that individual laboratory work by pupils was formerly more common in German schools than it is now. He says, *German higher schools*, p. 350, "The presence of laboratories well equipped for individual work, and supported by annual appropriations in most German schools, shows that the present method of science teaching is a reaction against earlier notions concerning the function of laboratory practice. So long as the aim was to

teach the sciences *per se,* laboratory work was necessary for each individual; but with the advent of the idea that the sciences are no more to be considered independent studies than other subjects of the curriculum and that mental development of the pupil is of more consequence than definite information on any one subject, class instruction at once comes into the foreground. Laboratory work is still counted an exercise of great value, but its aim is to facilitate application rather than to promote individual investigation. The right use of the inductive method by no means shifts the responsibility from the teacher to the pupil. The teacher must do even more teaching; in fact the pupil can be more safely trusted to work independently along deductive lines than inductive."

Now I suspect, being doubtless prompted to this suspicion by a long-established conviction or prejudice of my own, that this passage is to be taken as indicating that the Germans once tried the qualitative, "*heuristic,*" method of laboratory work for pupils and found it impracticable; found that the pupils had virtually to be told everything, and naturally concluded that it was easier to tell a thing once to a class as a whole than to tell it to each member of the class taken singly. If this has been the experience and the conclusion of the German teachers, there are many teachers in America who have been led in the same way to the same end. Furthermore, just as American teachers have found practicable and profitable laboratory work for their pupils in quantitative exercises, whether "along deductive lines" or not is of little consequence so long as it requires independent, unbiased observation and thinking, so German teachers appear to be moving—slowly, to be sure—toward a like discovery. Let me give one or two quotations in support of this proposition. In volume iv. of Baumeister's *Handbuch der Erziehungs- und Unterrichtslehre für höhere Schulen* (1898), Professor J. Kiessling of Hamburg speaks very approvingly of experiments or observations to be performed by the pupil at home. These interest the elders of the family and may form in the pupil a life habit. Kiessling, however, gives a warning: "If this home-work is not to degenerate into play, but bring lasting benefit, it is desirable to have taken

up from the beginning measurements and calculations and the graphic representation of finished series of observations." He presently continues thus: "In various quarters the establishment of pupil exercises as an elective part of the instruction has been discussed, and in many institutions such exercises have already been established with excellent success. This success is, however, conditioned so exclusively on the personality of the teacher in charge and the character of the apparatus and space at command, that formidable hindrances are still in the way of the general introduction of such exercises. This side of physics instruction has been very thoroly dealt with by Noack in Giessen, whose *Guide for practical pupil exercises* [*Leitfaden für praktische Schülerübungen*] offers sufficient exercise material for all needs, tho the author of it declares with especial emphasis that in its use any overstepping of the boundary of the field of elementary physics prescribed for the higher schools by the *Lehrpläne* is to be strictly avoided."

In the *Zeitschrift für den physikalischen und chemischen Unterricht*, vol. 15 (1902), in the account of a session, September 9, 1901, of the *Verein zur Föderung des physikalischen Unterricht zu Berlin*, occurs the following: "The same [Herr Hahn] spoke on pupils' exercises and the arrangements especially adapted for these exercises in the domain of heat conduction and radiation, thermometry, determination of melting-points, quantities of heat, specific heat, heat of evaporation. He showed that in regard to pupils' exercises, people are in foreign countries, namely, in England and America, far ahead of us, and he emphasized the necessity of not letting ourselves be surpassed by these countries in so important a field of instruction."

In the same *Zeitscrift*, vol. 15 (1902), p. 129, Dr. Carl Noack, already mentioned in the quotation from Kiessling, opens as follows an article of considerable length on *Apparate und Aufgaben für physikalische Schülerübungen:* "To a strongly expressed wish of the editor of this journal [Dr. F. Poske] for more exercises and problems for the pupils' laboratory course [*Schülerpraktikum*], I respond so much the more

willingly because of late the interest in this side of instruction in physics seems to me to have again become active." Dr. Noack presently goes on, after remarking that lecture-table experiments on the heat developed by an electric current are inconvenient, to give suggestions for many exercises, the titles of a few of which I will reproduce here:

1. How does the current heat depend on the current strength?

2. How does the current heat depend on the resistance?

3. To determine the amount of heat developed per second by 1 ampere with a potential difference of 1 volt.

4. To determine the resistance of the calorimeter wire by means of the equation $w=Q\div 0.237\ i$.

In all he gives twenty titles, all or nearly all of which relate to quantitative work.

In the same journal for November, 1901, is an abstract of another paper by Dr. Noack, from which abstract the following passage is taken: "He has from the beginning laid greater weight on measurement exercises, and has become with the lapse of years and the accumulation of experience still more confirmed in this opinion. Not that he would have it [qualitative work] put aside altogether; the production of Chladni's sound-figures, the development of representations of magnetic lines of force and fixing of them on sensitive paper, the seeking out of a frictional electricity potential series, reproduction of electric radiation-figures after Lichtenberg and Antolik, or the building up and study of optical instruments on the optical bench, have even with him found their fitting place; but they, nevertheless, vanish in number and significance in comparison with the measurement exercises, and he has, moreover, in all these years not found that the wish and the need for more qualitative experiments arose among the pupils participating; on the contrary, those experiments and problems were handled with livelier interest and greater zeal in which a result traceable by number or curve is gained."

To sum up in regard to physics: The Prussian higher schools, especially the *real*institutions, give rather more time to physics teaching than American secondary schools give to it.

The general ends sought in the schools of these two countries are not very different. Probably most good American schools would subscribe to Official Comment 1, without much change.

The means by which the general ends are sought in these two countries respectively differ considerably. Prussia has greatly developed the method of lecture-table demonstration, which many American teachers, partly, no doubt, from the shameful lack of manual assistance in American schools, at present sadly neglect. On the other hand, we in America are much farther on with the problem of class laboratory work in physics than are the teachers of Prussia.

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IV

EXERCISES IN THINKING ABOUT NUMBER AND SPACE: TRANSITION TO ALGEBRA AND GEOMETRY (V)

Concerning Space

Ways of Regarding the Straight Line, the Circle (Circular Line), the Plane, and the Sphere (Sphere-Surface, Spherical Surface.)

On looking at this sheet of foolscap, does it seem to be smooth or to be rough? If, instead of looking at it, you feel it, by passing the tips of your fingers over it, does it still seem to be smooth? You have tried sight and touch. Have you other "senses"? What are their names? Have these senses anything to say as to whether the sheet is smooth or rough? Two of our senses, then, tell us that the sheet is smooth, the others are silent. Have you ever seen a piece of dry starched unironed linen? Was it smooth and even or rough, irregular, and uneven? Now look at the sheet thru this magnifying glass, and tell me whether you see anything like that piece of linen. Do you think the sheet is really smooth and even, as touch and the naked eye tell us, or is it as the glass seems to show, rough, marked by many ups and downs, by numerous little elevations and depressions and ridges like those of an orange peel? As John doubts the story of the glass, I will ask him to examine the paper again with the naked eye in better light, at the window yonder. William may tell us, if he can, why we should rather believe the eye when it says "rough" than when it says "smooth." We agree now that the sheet is rough, uneven, irregular. This sheet is a solid, a material or physical solid; and the space it occupies, what sort of solid is that? Are the two solids the same in *shape?* Then you can tell me whether that space solid is smooth or rough, even or uneven. What is the answer? Has the solid a surface? Is that surface smooth or rough, even or uneven?

Is there any difference between saying a *solid* is uneven and saying the *surface* of the solid is uneven? (No.) Explain.

The surface we have been talking about, tho at first it seemed to be even, is really very uneven. Now let us get a surface that both *is*, and *seems* to be, uneven. I will ask Henry to take this sheet and crumple it up into a wad. He may now unfold the paper somewhat so that we may see the entire sheet. Is it now smooth or very uneven and irregular? Is the same true of the space it takes up? If, now, you treat that solid as a surface, what adjectives would you use to describe that surface? Close your eyes and think of a point moving in this uneven surface so as to trace a circuit from some point back to the starting place. Can you see the path in your mind's eye? The path you have imagined is a *closed* line. Why call it closed? John may take this pencil and mark on the crumpled paper the sort of path he imagined the moving point to trace. Very well, perhaps no two of us imagined exactly the same path, but all of us imagined *closed* paths. Any such closed path will do for our purpose. You may all of you again close your eyes and this time imagine the surface *cut along such a closed path*. Have you in this way imagined a piece cut quite out of the surface? Now think of this piece as being slipped about on the surface. The shape of the piece is not to be changed. As the piece is slipped about over the surface, does it *fit* everywhere? (No.) Does it fit *anywhere?* (Except in its original position, probably not; certainly not, if the surface is sufficiently uneven, and it may be.) Suppose the piece *turned over* and then slipped about on the surface, will it fit? Can you not think of other such uneven surfaces? Have you ever seen a sea-shell? Tell me what kind you have seen. How large was the largest? What were the colors? Could you describe the shape so that a person who never saw one could get the correct image of the shape from your description? The shell has a *surface*, has it not? If a piece of that surface were cut out and slipped about on the rest of the surface, would it fit? Could it wabble while touching the surface? But if the piece fit, could it wabble? Would the cut-out piece

fit, if turned over and slipped about? Henry may describe in the same way the surface of a battered tin can. Describe the *surface* of shallow water rippling over a pebbly bed; also that of an icicle formed in a strong, variable wind.

Are all surfaces so irregular and uneven as those we have been talking about? Name one that is not. Imagine this ball to be perfectly round. Has it a surface? What separates the space the ball takes up from the rest of space? Has this boundary any thickness? Henry may take this sharp pencil and trace a closed path, as irregular as he pleases, on this ball. Now tell me, if the piece of surface so marked out were slipped about on the rest of the surface, would it fit? Exactly? (Yes.) Everywhere? (Yes.) Such a surface is said to be *uniform*. Can you remember that word? Spell it? What does it mean *as a word?* Can you by whistling make a uniform sound? Try it. Now tell me precisely what a uniform surface is. What is the *test* (criterion) of uniformity in case of surfaces? Is the surface of your hand uniform? Is that of a squash? Were the other surfaces we spoke of uniform? Why not? Now, John, in case of this ball surface, if a cut-out piece were turned over, flopped, as we sometimes say, and then slipped about, would it fit? (Nowhere.) If it would fit everywhere on being turned over and slipped about, we should say the surface was *reversible*. But as the turned-over piece fails to fit, we say the surface is—what? (*Irreversible.*) The best way to learn such words is by using them. Tell me now exactly what you mean by saying this surface is irreversible. How many *sides* has this surface? Name them. (Inside and outside.) Are the two sides alike? (No.) If the surface were reversible, would the two sides be exactly alike? (Yes.) If the sides were exactly alike, would the surface be reversible? (Yes.) We being outside of the surface, it bulges or swells out *towards* us, and we say it is *convex;* but now if we were within, it would swell out *away from* us, and we should call it *concave*. Can a surface be convex on one side without being concave on the other? Let us now return to the ball surface. We have found out two of its properties. What are their names?

(Uniformity and irreversibility.) Tell me again precisely what we mean by saying this surface is uniform and irreversible. We name such a surface *Sphere* (or Sphere-surface). You may now define Sphere. (A sphere is a surface that is uniform and irreversible.)

I wonder if you can point out a surface that is *both* uniform and reversible. Is it a solid, a surface, a line or a point that separates or bounds off the blackboard from the space this side of it? Let us apply our tests to that surface. Imagine any piece you like cut out, not of the board, but of—what? If slipped about over the surface, would the piece fit? Hence the surface is—what? (Uniform.) If the piece were turned over and slipped about, would it fit? Everywhere? The surface is supposed to extend out beyond the edges of the board, without end. Hence *this* surface is—what? (Reversible.) Such a surface is named *Plane* (or Plane surface). You can now define Plane. Do so. (A plane is a surface that is uniform and reversible.)

Now you may compare the sphere and the plane. They have one mark or defining property *in common*. What is it? What property or mark has the plane which the sphere has not? How many sides has the plane? Are they exactly alike or not? Explain. Is one side of the plane convex and the other concave? (No.) If you were within (*i. e.*, on one side of the sphere, could you pass to the other side without going thru? You are on one side of the plane, could you pass to the other side without going thru? Not even tho you were able to fly as fast and as far as light? (No.) Why not? Can a bee fly round a sphere? Can a bee or an eagle fly round a plane? An eagle can fly round some pieces of a plane, can it not? Why not round all pieces? Why not round a whole plane? Could it go round the plane, if it could fly without atmosphere? A sphere separates the whole of space into how many solids? (2.) What are they? (The space within and the space without.) Are these solids shaped alike? Have they the same size? Does a plane separate all space into parts? How many? Describe them. (The part on one side and the part on the other.) Are these parts alike in shape? In size? (Such seems to be the case.)

We have talked of surfaces some of which are *neither* uniform nor reversible (as the egg-shell surface), some of which are *both* uniform and reversible (all planes), some of which are uniform, but not reversible (all spheres), and now, I think, a certain question arises. What is it? (Are there any surfaces that are reversible without being uniform?) And what is the answer? It seems a little odd. Things would seem to balance off better if we *could* think of such surfaces. Do you agree? Where is the trouble? Is it in the meaning of the ideas, reversible and uniform? If a surface is reversible, is it also necessarily uniform? What is the *converse* question? What the answer?

Do you think we may talk of lines very much as we have conversed about surfaces? Very well, let us try? Look at this wire, which William was good enough to bring for us. Is it quite regular thruout its length, or does it contain kinks and bends? The space it occupies, is that shaped like the wire or not? Is that space a surface or line or solid? Now imagine it to grow thinner and thinner, without otherwise changing shape, till it has neither thickness nor width. What have we now? (Line.) Suppose next that we imagine that line fastened by one end to the ceiling, so that the line hangs down. Can you also imagine the line drawn down till all bends and kinks are out? If you cut across the *wire* so (showing), the cross-section, as it is called, would be a small round—what? (Surface.) But if we suppose the *line* so cut, would the cross-section be a surface? What would it be? (Point.) Can you think of our hanging (suspended) line, really only a segment, as extending on up thru the ceiling, up and up, on past the distant stars, going right on without end? Let us suppose it to go both up and down without stopping. So it shall have *neither beginning nor end.* What adjective do you use to describe such a line? (Straight.) That is right, and now let us try to make out just what we mean by that. Imagine a piece, or segment, of the line cut out and slipped lengthwise along the line, will the piece fit? The straight line is, then,—what? (Uniform.) Now suppose you think of the segment turned over in any way and then applied length-

wise and slipped along on the line. What have I asked you to suppose, Henry? True, and now tell me, will the piece fit? The straight line is therefore also—what? (Reversible.) If a line were not reversible, should we call it straight? What two properties (or marks or characteristics) have we found for the straight line? If you were asked to tell what you mean by calling this line straight, what answer could you make? Define Straight Line. (A line that is uniform and reversible.) And if you were asked to explain the meaning of those big words, what would you say? Are those words adjectives or nouns? What are the corresponding nouns? What surface is the straight line *analogous* to? I mean, what surface has the same two *defining* properties? (Plane.) We might call the plane a straight surface.

I believe that you can now point out a line that is analogous to the sphere. Try it. You say, the circle. Let us examine it a little. Look at this *hoop*. Who brought it here? I am very glad you did, it is very convenient. Is it perfectly round? Suppose it is, whether it really is so or not. How may we treat it as a line? If a cut-out piece of the line were slipped along (round) the line, would it fit everywhere? Then what adjective may we apply? If the piece were turned over so (showing) and slipped along, would it fit? (Nowhere.) So the line is—what? (Irreversible.) I will now ask John to define *Circle*. (It is a *line* that is uniform, but not reversible.) Who will compare the straight line and the circle as we compared the plane and the sphere? By help of this tangled string (or wire), Henry, I hope, will show us clearly that a line may be neither uniform nor reversible.

A little while ago we talked of a point so moving in a surface that its path should be a *closed* line. I believe we shall find it interesting to look at the matter again. William may tell us how the point must move, and then illustrate by use of the board or sphere or paper or other device. Is it *sufficient* that the moving point shall *stop* where it *starts?* Very true; is it *necessary?* Might not the point cross its path before returning to the point of departure, and so form a *loop?* And this loop, should not we call it a closed line? But in such case,

might we not agree to think of the loop as being traced by a point starting on it and moving round without leaving it? This being understood, I think we may say it is *both necessary* and *sufficient* that the point *stop* where it *starts* if the path is to be a closed line. Do you agree? Joseph may state precisely what the agreement is. Very well, let us stick to that agreement. If the closed line is to be *in* a surface, where must the point move? Now, *if we cut a surface along a closed line, do we thereby separate the surface into two pieces?* William answers yes. I will ask him to take a pencil, a knife (or pair of scissors), and this sheet of paper, which we will treat as a surface, and show us exactly what he means and why he believes it. Do you agree with him, Henry? Tell me once more just what the statement is. (Cutting a surface along a closed line divides the surface into two pieces.) Very well, let us try it with another surface. Henry may cut a strip, say an inch wide, from this foolscap sheet, draw a black line through the middle of the strip from one end to the other, mark one end of the line A, and place the letter B at the other end, but on the *opposite* side of the strip. Next, bring the ends of the strip together so that B shall fall *on* A, and fasten as with paste. Disregarding the thickness of the paper, we now have a band-shaped surface. Is the line from A round to B a closed line of the surface? (Yes.) Henry may cut along this line. What is the result? (Two pieces.) It does seem as if that must be the result every time. Do you not think so? Nevertheless, there are many kinds of surfaces, and we might try again. Make another strip like the first and mark it exactly as before, except that B is to be put on the same side of the strip as A. Again bring the ends together, *twisting* the strip so that B shall again fall on A, and fasten as before. Now disregard the thickness and we shall have a twisted surface. Notice carefully that our line is again a closed line, being traceable by a point moving *in* the surface from A round and back to A. Henry will now cut along the closed line. Has the unexpected happened? How many pieces are there? It seems, then, that we must change our sweeping statement about always getting two pieces. How? May we conclude that there

are surfaces which we cannot divide into two pieces by cutting along a closed line? Is not this statement also too broad? Our first statement included *all surfaces;* and our second, *all closed lines* of some surfaces. I think John can show us how to draw a closed line in that twisted surface that *shall* separate the surface into two pieces. What do you now think our statement should be? (In *some* surfaces *some* closed lines may be drawn which will not separate the surfaces into two pieces.)

When we talked of the plane we agreed that it has how many sides? Alike or unlike? And the sphere, how many sides has that surface? Like or unlike? To paint a plane *completely,* one would have to paint both sides. Do you agree? After painting one side, it would then be necessary to go *thru* the plane, would it not, to do the other half? Is it the same with the sphere? (Yes.) Explain. Consider this sheet of paper as a surface, and tell me whether to paint it completely it would be necessary to go thru it. But you are certain that one would have *either* to go thru the surface *or* round an edge of it? And is that because it has *two* sides? Then if you should find a surface that you *could* paint completely *without* having either to go thru it or round an edge, I suppose you would be compelled to say that that surface has but *one* side? Try that band-shaped surface. Must you go thru or else over an edge? How many sides has it? (Two.) Now try that twisted surface. Can you paint it completely without either passing the brush thru it or lifting the brush over an edge of it? How many sides, then, has that surface? (But *one.*) Isn't that rather strange? Would you a few moments ago have believed there could be a one-sided surface? But now you *see* such a one? A while ago we found that that twisted surface has another striking property. What was it? I wonder if every one-sided surface has that second property. What is the converse question? I wonder if each of those properties *implies* the other.

C. J. KEYSER

COLUMBIA UNIVERSITY

(*To be continued*)

V

THE AMERICAN COLLEGE COURSE

BY A GRADUATE OF THE UNIVERSITY OF CALIFORNIA

In responding to the request of the EDUCATIONAL REVIEW to give my impressions of the American college course, I find, with some dismay, that my first impression is one of great confusion of mind. I am even now, with the Bachelor's degree in possession, not quite sure what my *college* course was. We were accustomed, as undergraduates, to speak quite indifferently of our course as a university or as a college course. It was only by accident, as it were, that I learned, during my Junior year, that there was supposed to be, or ought to be, a sharp line of distinction between the work of the first two years and of the last two, and that the latter alone could properly be called university work. But I venture to say that this distinction was unknown to nine-tenths of my college mates. In fact, the man who, in conversation, pointed out the fact to me, gave it almost as a new discovery. For most of us the university course consisted of two parts—work that we were commanded to do, and work that we might choose to do. The former was supposed to be completed during the first two years, but it was almost the rule rather than the exception that we plunged enthusiastically into the work of our choice as much as we were permitted during the first two years, and left a good part of our prescribed work dragging on thru the Junior and Senior years. Thus the line of demarcation between the first two and the last two years was never very marked, and the work of the four years came to be looked upon rather as a unit than as two clearly distinguished periods of work. We were taught, however, to recognize that there was a distinct difference in aim and method between the prescribed work and the "group elective" or "major" work; and in recognizing this difference, I suppose we were in fact, tho not

in name, marking the distinction between the college and the university, and perhaps marking the distinction in the most essential way.

The confusion in which we found ourselves had its bad effects, however, in the fact that, tho there was this recognition of difference, it was at best but lagging and vague. The fact that our university course was not two but one tended to make the distinction within it unimportant; and hence the methods and aims of the period of prescribed work were unconsciously carried over into the group elective or properly university period. It seems to me that the fact of this confusion makes one of the strongest arguments for a distinct temporal division of the four-year course; the naming of the first two years as the college period and the second two as the university period would certainly tend to emphasize for the student that the latter was not a simple continuation of the former. In the University of California, the plan has for some time been under consideration of granting a certificate upon the completion of the first two years of work. Whether this certificate ought not rather be the Bachelor's degree may be disregarded for the moment; the point of importance in the plan is that it emphasizes a distinction in the four-years work that is real and vital, and one that at present is but confusedly made. The result should be a still more effective organization of both periods and a more conscious advance of the student to properly university work.

I have said that our distinction was between work that was prescribed and work that we chose to do. I can now see that the aim of the prescribed, or strictly *college* work, was to give us a sufficiently comprehensive view of the main spheres of human thought. We were given our æsthetic and, in a sense, moral culture in English and the classics; we were trained to exactness in abstract thought by the mathematics; while accurate investigation of the physical world was taught by the natural sciences. No doubt the training was all of indispensable worth; the difficulty, however, was that all these studies were simply separate tasks that bore no definite intrinsic relation to each other. Mathematics was mathematics; geometry,

we could see, was of practical use; algebra, perhaps, was practical in parts, but was mainly an inordinate amount of mysterious calculation. What the deep significance of mathematics was in the scheme of sciences we never knew and were never taught to inquire. So, too, with the classics: we understood that thru the classics one would attain a fine culture, but just how or why we never discovered. We patiently dug out our translations and hoped that the culture would be a-coming. There was nothing to show us the true worth of Greek and Latin thought, the real significance of approaching the problems and interests of life from the points of view of peoples of widely different character. In the natural-science work we were of two minds: if we were classical specialists, we grieved to be compelled to waste time over this work that would give us no culture and would be of no use to us in our special line; if we were not classically-minded, we would feel that here, at last, we were in a sphere utterly different from and at complete variance with classical study; here we were really dealing with hard facts; and we would come to regard the classics as effeminate excuses for learning.

What I mean to make clear is that, altho the aim which our university evidently had in prescribing work was to give us a comprehensive view before we specialized upon any one subject, there was, in fact, nothing in the work that was in any true sense comprehensive at all. To know mathematics, and Latin, and Greek, and the rest, was certainly important, but the learning of these as separate could not of itself constitute for us a true comprehension of these. The right studies were there; what was lacking was the conscious organization of them for the student. He should undoubtedly have studied each separately and learned it in its own terms, but having done that, his work was really abortive, unless he was taught to see the larger significance of each in terms of all the others. I should, doubtless, never have realized this lack had it not been my lot to take up a line of work in which the interrelating of things is one of the chief interests. Thru this direction of my training, I was led, before my graduation, to see the need for such an organizing view; but (and I speak entirely without

vanity, since my own recognition of this need was largely accidental) the student ordinarily has no very distinct consciousness of relations; he tends to take in single doses what is given him, without inquiring further; hence, it is most important that he be made clearly conscious of the wider meaning of the work that is prescribed him. This can only be done adequately by a separate course which will serve as a critique of all the arts and sciences—a course which will stand above all the separate sciences and give them their interrelated significance. I feel that I should have gone thru the drudgery of my prescribed work with immensely greater interest and insight if I had been led in my first year to understand what it was all about. Here is really the secret of the college boy's dislike of prescribed work: he *knows* the studies that he likes, and he thinks he knows what their value is, and so he longs for the period of free election; but not knowing the import of all these prescribed studies, he is up in arms against them. This lack of an interpretative, organizing course during my first two years seems to me to have been the greatest defect of my college period.

Yet this defect in the first two years might not have been so fatal if the Junior and Senior years had made it good. This, however, was not true. In the last two years the student might choose for his major study a modern language, say; he would specialize upon that study and naturally be as far from organizing his work as ever.

The true argument for prescription of work rather than entire free election—the argument for a distinctly *college* course—lies just in the need to compel the student to organize his studies—something which he will not naturally do if left to free election. It has seemed to me that this truest element of the prescriptive system was lost in my course just because too great trust was put in the students, that, given the facts, they would be able of themselves to learn their significance. The interpretation of facts is just what the immature student seldom achieves of himself; and hence a course which will serve to interpret and to stimulate the interest in a wider and deeper interpretation is the great need of the college period.

In my college days, the cry against "professionalism" in university work was already loudly raised. The introduction of education, of jurisprudence, of courses in commerce, and others of such a nature called forth vehement protests from those who felt that the four years of work should be free from the taint of the workaday world. And while I then joined heartily in the cry against professional courses, it seems to me now that the outcry was hardly fair or wise. Jurisprudence was tabooed because it was requisite for professional training; but Greek could be specialized upon by those who anticipated teaching it, and there was nothing but approval. A course in commerce was a degradation, but mathematics, studied just as professionally, was academically honored. So with all the strictly scholarly subjects—philosophy, languages, natural sciences, history, economics—there was no condemnation when the prospective teacher of these began his specialized work. But if none here, why then the condemnation of jurisprudence, medical chemistry, etc.? The men who cried out against the introduction of professional courses were in reality dealing unfairly with those who were to work outside of academic lines. The student who was to teach Greek, say, or mathematics, was given at least two full years' start over the prospective lawyer or physician, notwithstanding the fact that the latter, much more than the former, ought to begin early in their professional work. It would have been objected, of course, that the specialized work of the Greek student was not professional, but simply general culture work. Let us put it so; yet there was no one, in my college days, that cried more loudly against the scientific prescription than the classical student; and if we inquired closely the cause, we should find that it was just because science was not "in his line," and so was a waste of time. Sheer professionalism and unblushing!

It seems to me that in this whole question of introducing professional studies into the four-years course, two phases that ought to be kept quite distinct were constantly confused. A study of professional subjects may not in itself be bad; but a professional spirit will undoubtedly have vicious effects upon

university work. To have the first is not necessarily to accompany it with the second.

The study of professional subjects, as I have shown, is even now begun in many lines, after the first two years. There would seem to be no valid reason why it should not be begun in all lines. I do not mean that the "professional school" should be everywhere substituted for the Junior and Senior university years. In the case of many students—notably engineering students—such substitution is necessary, and should be definitely approved. The engineering student has not time for four years of purely academic training, and if, by shortening the period to two years, we prevent him from building his technical training immediately upon his high-school work, it will certainly have been worth while. In many lines of work, however—law, teaching, medicine, etc.—there is the possibility of doing professional study of a *university* character previously to entrance upon the work of a technical school. What I mean is this. Professional studies may be approached in two ways: there is, first, the scholarly way, in which the pure search for truth in the subject-matter is the dominant aim; and there is, second, the more narrowly professional way, in which unprejudiced research is subordinated to the learning of those details that are of direct practical use. The second is the way of the professional schools; the first should be the way of the university years. In approaching professional work in the scholarly or scientific way, the university may be farthest from the narrow spirit of professionalism, which is the spirit that cries ever for the immediately practical. I think it was the failure to distinguish between these two phases of the question that made the condemnation of professional work so unjustly wholesale.

If professional studies, approached in this scholarly way, belong properly to the university period, it would seem proper for the university to point out distinctly that its training is of two kinds: (1) a general training in the humanities; (2) a special training in a professional subject. By emphasizing the fact that its professional training is of the scholarly or scientific kind, and in so far, widely different from the narrow professionalism of the technical schools, it will tend to set high

the standard of professional study, to discredit professionalism that has not a scholarly basis, and rather than degrade the university to the level of the merely practical, will raise the practical to the height of the true. The fact, too, that the four years are not entirely of academic character will tend to attract students who are now driven to the technical schools because they have neither time nor means to devote four years to merely general training.

To be sure, it may be urged that not only should not lawyers and physicians begin their professional study in the university, but also teachers and scholars generally; that the four years should be a strictly unprofessional training in the humanities. I am well aware that the training in the humanities, especially in the classics, is lamentably inadequate when ended with the Sophomore year. But it seems to me that the way to correct the defect is not to add two more years to such training. The ordinary student cannot spare these two years, and in one way or another he will manage to save them for his special work. The defect should be rectified by a better organization of our elementary schools, especially those of the primary grade. I look back upon my training in the elementary schools with an absolute horror at the amount of time wasted. Years were spent upon subjects that could have been mastered in a few months if approached in later years. For the time spent on geography and advanced arithmetic (wall-papering, carpeting, and banking-and-discount were the favorites) I should now be an expert in these studies. It seems to me that the reorganization of primary and secondary education that has been carried on so successfully in recent years should not cease until the strictly collegiate training that ends with the Sophomore year shall have become a training in the humanities of which we need not be ashamed. In thus reorganizing from the bottom, we should give the student a general training that was perfectly adequate, and we should also save for his special work two years—the Junior and Senior years—that he can ill afford to lose.

With regard to the much-mooted question of waste of time in the college course, the opinions of my college mates were

various. As our interests differed, so our estimates of the value of our prescribed courses differed. Most of us could not see the need for the much mathematics which we were compelled to take; but here again, it seems to me, we were simply suffering from ignorance of the real import of our study. The organizing course which I have suggested would certainly have tended largely to cure such disaffection.

I think that of all our prescribed studies we could least comprehend the value of the classics. I attribute this to two causes. In the first place, our training in the Greek and Latin had been begun so late that we really had no effective grasp of the languages when we discontinued their study at the end of the Sophomore year. As a consequence, they were seldom more than an external drill for us, a drill that soon became extremely tiresome. It seems to me that the only remedy for this is the prolonging of the period of classical study, so that the student may not complete it until he has a real grasp of the literatures. But, as I have said above, this must not be done by usurping the Junior and Senior years, but rather by reorganizing the elementary schools to this end.

The second reason for our poor regard for the classics was the fact that classical training was predominantly philological and syntactical. We were never effectively taught to view the classics as history, and politics, and philosophy—in brief, as significant human *thought*. So far as we ordinary students could understand, the study of Greek and Latin was almost solely for the purpose of attaining skill in translating. We lost the wood in our syntactical trees. There were exceptions to this mode of teaching Greek and Latin, but they were rare; and they were prevented from being very effective just because of our lamentably elementary grasp of the languages.

It has seemed to me that our division into university departments is largely to blame for the comparatively ineffective study of the classics. Our universities have departments of history, of philosophy, and so forth, and, quite separate from these, departments of Greek and departments of Latin. If the latter departments are not to encroach upon the former, they must confine their teaching of the classics purely to grammat-

ical and rhetorical form. And with the same chariness of encroaching, the other departments keep clear of the classical field. The result is that the history and philosophy—the *thought content*—of the classics are almost entirely ignored. But this is certainly to lose what is of most worth in the Greek and Latin literatures. If the student could be made to approach these literatures as significant *content*—as history, and politics, and philosophy—they would no longer be for him simply a tiresome drill in thumbing a lexicon.

This mode of approach is accomplished with success, I am sure, in the Oxford undergraduate course. What is most surprising to an American entering such a course after an acquaintance with American university methods is the fact that the classics are immixed with almost everything in the curriculum. He studies history, say, and he finds himself directed to Thucydides and Polybius. Why, Thucydides had been Greek for him at home and not history! He had studied political science in English books and up-to-date; but lo! here he is cast among the thieves into the Greek of Aristotle's *Politics*. He had studied philosophy mainly out of the mouths of the Germans, Englished over; here he is sent directly to the Greek of Plato and Aristotle.

I am well aware that our system of elementary education will require much reconstruction before we may hope to have our Freshmen and Sophomores in a condition to approach the classics in this way. But it seems to me that with the directing power that the universities possess in their matriculation requirements, such reconstruction, while difficult, is quite possible. At any rate, if classical training continues to be of the external character that it was in my undergraduate days, it need not be surprising that students will continue to rebel against work that seems to have so little vital connection with the deeper interests and problems of life. In what I have said I am not referring, of course, to the advanced work in the classics.

In general, those of us who could easily afford a four-years course hung on grimly to the study of the classics, in the hope that something would come of it all; and to those of us who

were fortunate enough to continue beyond the Sophomore year there was undoubted reward.

But for those who could not so well afford the four years, the case was more serious. These men were continually asking whether this study, and even the other collegiate courses, were really worth while; and many of them would drop out after a short time to enter strictly professional work. I can see now that these men were mistaken; but most of them, especially those who were supporting themselves, were terribly hard pushed, and their necessity made them demand an adequate return for every hour spent in study. The four years stretched ahead of them, a vast amount of time for young men who must win their way at great odds; and there was nothing to show them that the work was not all pretty much of the character of a luxury. We, in our leisure, were content to plod on, in the blind trust that something would come of it; these men demanded something explicitly worth while, and the result was—the technical school or business life. They were men usually of serious character, who would have gained much from a collegiate training. It will not do to speak contemptuously of their narrow practical view; it was narrow because there was no explicit effort made to give them a broader view. It seems to me that in my day many of these men would have been held if, in the first place, the study of the classics had been of the character I have indicated; and, secondly, if an adequate interpretative course had shown them the interrelated import of all the collegiate studies. But in addition to this, there should have been the prospect of a definite stopping place at the end of two years. Many of these men could not see their way to a four-year course; and to attend classes for two years and have nothing to show for it goes against the human grain. Consequently, it would seem wise for the university to make some official recognition of the completion of the strictly collegiate course. Students who now attend but one year would be encouraged to remain the two, and having remained the two, the two additional years would not seem so long a period and would, in many cases, be achieved.

In the matter of the character of this official recognition, it

seems to me that the plan of granting a collegiate certificate is wiser than granting a Bachelor's degree. It is quite true that a Bachelor's degree, granted at the end of the Sophomore year, would be the equivalent of the same degree from our early American colleges. But mere consistency with historic conditions should not of necessity be the determinant of our present practice. It may be quite possible that the old American collegiate degree was not what it ought to have been, that we are only now, by our advance of standards, approaching a Bachelor's degree that represents adequate training. In fact, if we regard the English Baccalaureate, we can see that our present A. B. is, at best, only on a par with it.

It would seem that the duplication of degrees—the Bachelor's degree in Arts at the end of the Sophomore year, another degree at the end of the Senior year, and still another at the close of the graduate period—would largely tend to confusion. The academic world might grasp the fine distinction between a collegiate and a university degree—a B. A. and a B. S., say—but the general public would not. The general public would understand—and the numerous misunderstandings of President Butler's plan are to the point—that the change meant a recognition by the university that it had been demanding too much education, that two years, after all, was sufficient, and that the old four-year fogies had been sent to limbo. The American public, on the contrary, rather needs to be educated up to the great importance of scholarly training, lest its growing commercial spirit lose for it the fine idealism, the high purpose, of the pioneer fathers. For this reason the plan of granting a collegiate certificate seems much wiser, for a "certificate" would never be confused with a "degree." A Bachelor's degree, whatever its historic associations, stands now for what is popularly known as a "university" course; and it would seem to serve the cause of university education best not to alter its present connotation.

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VI

THE PUBLIC-SCHOOL CURRICULUM [1]

This address is given because the task was assigned by the executive committee, it being assumed that something decisive was necessary to be said and that the writer's optimism and his faith in the salvability of the people thru education and training would protect him from the charge of either sensationalism or iconoclasm. The views here given are not hasty inferences prepared for this occasion, but are the conclusions of educational experience, long investigation, and some experimentation at the Normal School. The attempt is made to suggest the lines of improvement and construct plans of procedure rather than to destructively criticise. It is requested that time and careful investigation be given to these facts and observations, making experimental tests in actual school work before there be a protest against the conclusions or a repudiation of the proposed reforms. For several years experimental work has been carried on under the direction of the advanced training department at the State Normal School, and these results are here for the first time formally given to the public.

The American public school is assigned an impossible problem when it is required to give a practical education, prepare for college, and develop mind and character thru a curriculum which is not fitted to either end singly nor to all the ends jointly. The public school cannot confer the power nor attain the results that seem to be assigned as its part of the work of making men and women, as the assignment is unreasonable. Childhood and youth have their limitations, and these cannot be overcome by the devising of plans and methods, thru the construction of a curriculum or the development of organization and system. The college critic sets a standard of what is necessary in scholarship and working power that the college

[1] An Address delivered before the Iowa State Teachers' Association, at Des Moines, December 31, 1903.

course may be well undertaken, and fails to recognize the fact that the standard imposed is excessive in subject-matter and impossible of accomplishment under the conditions as they really exist. The man of affairs with business ideas and practical experience assumes that a public school should give a preparation which guarantees a scholarship and a power to think in real problems as they are represented, overlooking the fact that the schoolroom cannot reach the standard imposed.

In the midst of these complications and perplexities the public-school curriculum is prepared, the demands of all these impossible standards are accepted, and the plans and specifications are carefully set out without regarding first and foremost the suitability and the adaptability of the children to accomplish the tasks assigned. The pupils may rebel and protest, the patrons may condemn and recognize the futility of their children's efforts, the teachers may know the helplessness of their best attempts and constantly fail to accomplish the work designated; while the real causes of all the difficulties, the limitations of childhood and youth, are not considered. Again and again the forces are organized, the methods are revised, the management is made more strenuous, and the contest with the impossible and the unscientific is undertaken, as custom is so well established that its right to supremacy is never questioned.

THE PURPOSE OF THE CURRICULUM

This discussion assumes at the outset that the real purpose of any acceptable curriculum is to have regard for the rights and the interests of the pupil to be educated and trained, even at the expense of all plans of system and method not in conformity with these rights and interests. It also recognizes the fact as true that the proper function of the public school is to offer such a curriculum of studies that the way is opened to a preparation in scholarship and training such as will give qualifications of mind and character that will guarantee an independent, successful life for every individual. It is, therefore, admitted that the work that is obtainable in a public school should so teach the lessons of civilization that a pupil

is enabled to know, realize, and enjoy the blessings amid which he lives, and at the same time be so trained that he is able to intelligently escape the evils and vices which on every hand threaten to destroy the happiness and the serviceableness of his career. This problem grows in difficulty and complexity if it is claimed that there is a possible uniform curriculum, suitable for all schools of a state or nation, since it involves a discussion of matter and of mind in which there can be very little unanimity of opinion, and includes questions which are probably unable to be fully settled.

THE NONSENSE OF UNIFORMITY

There is no room for the adjustment of the difficulties that are raised by the attempt to secure uniformity. The doctrine of uniformity as a plan for the curriculum is unfortunate because it is in direct conflict with human nature, where variety in individuality is the supreme law. There is no uniform man, physically or mentally; there can be, then, no uniform system of education; there should not be any attempt at uniform training, since fossilization and complete adjustment of courses of study would bring evil rather than good. This discussion has then to do with one of the impossible problems of education because there can be no final word, no perfect adjustment of branches of study, no closing of the door to an opportunity to make improvement, no abandonment of the experiment station to test plans, no suspension of judgment and criticism on the theory that civilization has reached its mountain top and that progress has practically reached its limit.

There are no special benefits to be obtained from the acceptance and the enforcement of a uniform curriculum, since education is not accomplished by the application of any certain specific methods of instruction, by the learning of certain definite lessons, by the taking of certain prescribed branches, by the getting the capability to pass creditably certain peculiar examinations. Many inventors of magic methods of learning and teaching, many manufacturers of systems of schools, many manipulators of the machines of modern schemes of

civilization would like to have such a condition of education and are working hard to convince the people of the wisdom of their philosophy, but such a proposition to bring about fossilization will always be rejected by master minds in the practical world of affairs and should be repudiated as lacking in the genuine qualities that insure the best manhood and the best capability. This demand for uniformity in curriculum, in method, and in results is always from above, downward. The professional school urges uniform preparation for entrance upon its work and suggests the propriety of such results from the preliminary education given by the college; the college exacts uniformity from the secondary school as a *sine qua non* for recognition as an accredited institution. Each of this grade of schools, while recognizing the desirability of uniformity for entrance, insists also upon the privilege of permitting much variability from uniformity in their own service, thus admitting the impossibility of the problem and the nonsense of the proposition as a practical fact.

THE CURRICULUM A COMPROMISE

The accepted curriculum grows out of the customs, the experience, and the apparent needs of modern civilization, each factor having some influence in shaping the result, but, as a matter of fact, custom and precedent go farther in deciding issues than either good judgment or actual need. Fashion is a great power in adjusting what is studied in the schools, to a far greater extent than it dictates the cut of garments. Every attempt at the preparation of a curriculum is, therefore, a cause for controversy between the radicals and the conservatives, and the product of all real effort is to a large extent an approximation rather than a revision. The authorities who undertake to define and adopt a curriculum parcel out its details into years, grades, and branches, endeavoring thereby to interpret the essentials of the phases of civilization that should be the possession of a mature mind. Such adjustments are never permanent solutions because they are unsatisfactory in reality to all concerned and, hence, there is continual unrest, compelling re-experimenting, reconsidering, and reorganization as

the parties in power for the time being are radicals or conservatives.

There is then no necessary progress in results even if such changes secure a sort of uniformity, because uniformity is not necessarily the best attainment in educational work and may be indeed, and often is, a serious detriment. High schools are not necessarily better because they attain a designated kind of uniformity and are said to be accredited. Submission to the formalities of system is no guarantee of either better teaching or better results. Placing college graduates in every high-school classroom does not signify that progress is attained, because it is possible to be a college graduate and not possess the qualifications in scholarship, aptness to teach, or spirit of instruction that are essential to successful work, and the uniform plan of so getting teachers is not enough to give the schools power over life or efficiency in instruction. Hence, standards of uniformity are not necessarily blessings even if they do articulate the system, because the large majority of high-school boys and girls are to close their educational careers in the public schools. The ninety and nine need to be remembered, and it is not necessarily true that secondary education for the high-school pupil going to college, and secondary education for the one going into his life work without the college, are one and the same, even if the distinguished members of the Committee of Ten adopted such a principle as good pedagogy. The college voice was the chief one in that committee, and the common people, who are the ones particularly interested and who must also be heard in rendering the decision, are not of the same opinion. The expert's opinion on great public policies is as easily twisted from the proper solution because he is an expert as the common man's is because he has not had higher training.

It is certainly a fact that much time, thought, and expense are put into useless problems even in education. System and organization are pure formalities that have no vital influence within themselves. There is more good to come from the greatest liberty in teaching than there is from the most strict restrictions of the work, as the pupils to be educated are varia-

will be permissible. The proposed six-year high school is advocated to meet this exigency, not necessarily by extending the years of study, but by the hope that the life theory may have a little larger chance in the school's plans and exercises. Reorganization on the basis of a greater liberty could make the six-year high school a fact and dispense with two years of study now placed in the calendar of the curriculum of the grades.

THE EXTRAORDINARY EXPANSION OF COMMON BRANCHES

The public-school curriculum was the place where the doctrine of territorial expansion first became a law of cause and effect. In the beginning of free schools the annual session consisted of but a few weeks in each school year, the rest of the time of the pupil being spent in industrial occupations, thus putting into immediate application what he learned in the school by a regular test of the realities of life. At the present time, by the extension of the weeks of attendance upon the school to nine or ten months in the year, the theoretical education has been enlarged and the practical education reduced, so that the industrial experience is taken away and the effect is to develop the scholar rather than the man, and an expert in second-hand knowledge rather than a worker in first-hand knowledge. But this is not all that is done by the expansion of time, as the same identical branches are still in the curriculum and have been expanded and expanded and expanded until they fill completely the space thus provided. This increase of time without a real reorganization of the work to be done is a positive wrong to the pupils, because it does not give real value to them for the largely increased demand upon attention, interest, and effort. It is well to ask whether it is really true that this expansion has given a thoroness superior to that of the old system as shown by the pupils themselves, and whether the results obtained in arithmetic, geography, grammar, penmanship, spelling, etc., are better than were obtained in the old-time short-term school. There can be and should be great reductions made in these branches of study because perfection in completeness is not obtainable in school

ble in all respects,—physical, mental, and moral,—destroying any actual possibility of uniformity in educational results, accomplishments, and power. Democracy always triumphs when, thru such liberty in individual action and in the power of the local community to develop its resources and strength, it thus properly places in service all it has. It is not a wise thing for a community to quit doing its own thinking and managing. It should never surrender its own province and accept a system of inspection or education which means the dominance of imperialism, as by so doing it forfeits the real benefits of true liberty.

THE POVERTY OF THE REGULAR CURRICULUM

With all the heroic attempts to improve elementary and secondary education by a dictatorship of the higher educational institutions, the curriculum that is now obtainable in most public schools is noted for its extreme poverty of practicableness because of its special leaning toward culture and discipline. It is possible for a pupil to pass thru the work of the entire curriculum, as mapped out, and yet be given no training which gives him the initiative in making a good living. Too much by far of the modern school atmosphere centers about much knowledge, many branches of study and large phases of training that are purely formal and, hence, valueless in practicableness because they have no vital relation to either happiness, comfort, capability of service, efficiency of application, or strength of personality and character—essential factors in the life present and also in the life to come.

The fear of modern utilitarianism which exists among the scholars and the educationists need not worry any of the modern philosophers very much because the public-school curriculum has not been much touched by the magic influence of the street, since it is certain that culture and fashion rule supreme instead of utility. There is too much reality in the criticism that public elementary and high schools are conducted on a plan that their work is not a preparation for life, but a preliminary training essential to the entrance upon some higher form of education where preparation for life as a career

many a teacher. It is an established fact that pupils of grades from sixth to ninth have a special adaptability for learning Latin, German, and other languages; they have the largest appreciative ability for literature in most of its phases; they possess easy tendencies toward art and nature; they can easily be trained in the gift of writing their native tongue outside of formal language exercises; they enjoy and are easily trained in vocal and instrumental music to a degree of success that is not even shown by high-school pupils who have been brought up on the old Gradgrind diet of the grammar grades. Experiments have proven that this is the very time to take advantage of the interest and the nature of the children and adopt a plan of work in the curriculum that seems radical and extreme to those alone who have not recognized that custom has given a false and a fictitious value to the so-called common-school branches. The unprejudiced investigator will find that this condition of judgment and practice is due to the authority given the modern text-book, to the belief that thoroness thus obtained in these elementary branches gives a remarkable power, and to the absolute faith that the American people have in their own free institutions, among which the public schools hold chief place.

THE POWER AND EFFECT OF LEGISLATION

The dominance of custom pushes the system of public education to the limit and incorporates the theories in legislation, making a condition that is as unchangeable in fact as were the laws of the Medes and Persians. While the law seems to leave the management of the schools to the sweet pleasure of the people of the several communities, the curriculum is decreed and defined by the statutes regulating the qualifications of teachers. The branches of study required in the licensing of teachers are the lines of study that are expected in every school because it is assumed that they are the keys to civilization and progress. Such emphasis as this specialization of statute gives a system of education, prevents reform, declines progress, nullifies effort in improvement, decrees the children and their training to formalism and to fate. The

nor in life, and a reorganization ought to be made that will give us manual training as a part of education, or if that is not to be realized, a six-year high school that makes high-school work possible two years earlier than now granted. More than half the present-day arithmetic, grammar, geography, and history that are commonly assigned to the curriculum can be dropped from the schools without real loss to the pupils who are preparing for the active duties of life. This may seem to be bad advice, but this abuse has obtained such a foothold that radical treatment is a necessity.

PROGRESS DELAYED BY CUSTOM

The greatest factor that settles the fate of any righteous reform is the opposition of custom. It knows no law but absolute submission to the aphorism that whatever is, is right. It takes more than ordinary courage to take issue with custom. It takes more than public opinion to overthrow it, as public action is the only solution in a democracy. However, the time is here when it is well to investigate the adaptability of the work that is being done and ascertain whether there may not be a better way to conduct our schools and thus get earlier results that are positively in touch with modern life. The so-called grammar grades are ready for a treatment that is the most heroic and permanent. The work that is commonly assigned them is unsuited in quality and quantity for the mind development and capability of the child, and besides, it is out of touch with modern civilization, as shown in the business and practical affairs of the world. At a time when the nature of the child indicates the special fitness of the mind for the study of languages and the development of a vocabulary, he is given tasks in English grammar or so-called language lessons which give no practical training and the nature of which produces a mental dyspepsia that is discouraging and unfortunate. He is also assigned work in arithmetic which is full of difficulties that are too much for the average college graduate, while he is expected to master kinds of history, geography, and other studies which lack inspiration and interest, have neither gymnastic nor practical value, and are the cause of the professional deaths of

so-called teacher-certificate system is a license system pure and simple, limiting the knowledge, the desire for more scholarship, the ambition for training and skill, and, hence, destroys any large usefulness and effectiveness in the teacher and interdicts all progress in education. The dead line of uniformity in what minimum knowledge teachers must possess, of absolute accuracy in multitudes of immaterial facts and fancies, of a supervision which brings up the schools in mechanism and form rather than vitality or thoughtfulness, develops results which may be very satisfactory to the admirers of schedules and of schemes for drills and marking time, but which must be entirely rejected and repudiated by all who seriously think of the happiness, the interests, and the welfare of the children in the schools.

Free, untrammeled teaching, unrestricted as to curriculum, as to methods, as to stages of progress, is much to be preferred to a license system which sets a large premium upon mediocrity and uniformity by idolizing meager preparation, little experience in life outside of text-books, and conditions that doom the school to helplessness and worthlessness before a lesson is taught. There is great need for encouragement—not for repression. There should be the right of discovery and extension, not the lassitude and the depression of limitations such as restrictive legislation makes necessary.

LITERATURE IN THE GRADES

The proper place to teach literature and develop a taste for the best in thought and language is in the grammar grades. But to secure attention to this, so as to secure recognition for the English language at its purest and noblest, seems impossible, as the legal fossilization repects the claim without delay. The pupils of the public school do not have a chance to get into familiar touch with literature because the curriculum is now so crowded with the standard and required that there is neither time nor disposition to enrich the instruction by a healthy change. Good reading of the best in literature finds the child ready for it during the grammar and early high-school grades, but to have the privilege means to take it at odd hours and to

touch the forbidden fruit. Even teachers do not value literature. They are not ashamed of their ignorance in this respect as long as they are able to get a first-class certificate in the branches required by the law as essential. Why need they qualify themselves in such a subject! For several years the State Normal School during the summer term has had a class for the purpose of giving special instruction to grade teachers regarding such work, hoping thereby to get proper rank for such a study by interesting the teachers. This one recitation for an hour for six weeks has not had patronage enough to justify its organization even when from 900 to 1200 were enrolled each year. Yet at the same time these same grade teachers have crowded the classes in algebra, physics, civics, and economics, altho not one of these subjects was absolutely essential to strong and effective work in their schools. They were attracted to these other subjects because they were required by law for a first-class certificate and for no other good reason. What is true of literature is also true of elementary science, nature study in all lines, and other kinds of school work that are not placed on the statute books of the State by the legislature.

THE WASTE OF TIME IN CHILD LIFE

There is, therefore, an extraordinary waste of time in trying to teach the unfit and the unprepared in age and mental development. There is no use to deny the fact that most of the exercises imposed upon the 6th, 7th, and 8th grades are not the kind of studies in either substance or method of treatment that is adapted to the character of the minds of the children, the standard of the power of thinking that is able to be given, or the taste and interest of such pupils. There is need then of great abridgment and great enrichment, and there is no use for people to be satisfied with conditions as they are and declare anyone an iconoclast who tells the plain truth regarding these serious matters. This waste of time in the life of the child is the greatest extravagance because it makes a bad use of the talent and the power of both teachers and pupils, because it costs the people a large amount of money to maintain with-

out giving a fair equivalent in education and training, and because it takes from the pupils the opportunities they need to accomplish what is really very important and desirable to attain. This waste occurs also in many places in the lower grades and also to some extent in the high school by requiring so much marking time, when there is apparent great activity without any manifest progress, and when there is also developed a disgust for school discipline and school work which destroys interest in intellectual things, and finally compels an abandonment of the school in order to enable the pupil to find something in other employments or business which actually appeals to his true nature and heart, and gives him realities instead of symbols, and spirit in effort rather than credit marks upon the books of the office. It is not the pupils' fault if they wish to quit school, if they make life hard for their teachers, if they give their parents worry and contest to keep them at their studies, because they are not taken into consideration very much in the management of the system, and their tendencies, likes and dislikes, interests and ideals are entirely forgotten when the table of the program of studies is set, while they are compelled to endeavor to digest a daily diet which is entirely inappropriate and unfit for their appetite or their digestive powers.

THE MANUFACTURE OF METHODS OF TEACHING

This state of affairs is a condition and not a theory. The teachers are continually compelled to deal with a proposition which taxes to the limit their ingenuity. They are not consulted regarding the subjects which they must teach their pupils, which may be unsuitable because of complexity or incongruity. The schedule is put down before them with complete plans and specifications. This work must be done in some way, and it is the teacher's problem to accept the plans and specifications and invent a method whereby these unfit and unappreciated subjects can be taught to a child before his mental development enables him to comprehend or assimilate them. Hence, there are many methods devised which are fearfully and wonderfully made, and which show marvelous

ingenuity and ability as inventions and schemes of instruction. Their wonderfulness is past finding out and highly creditable, because they show what teachers are capable of doing if they had half a chance. Such are the methods of teaching percentage to seventh-grade pupils when the subject is given them four years before they are mentally ready for the intricacies and complexities of its various applications. Such are the methods of teaching proportion and other advanced subjects which are really more difficult than either much of algebra or much of geometry. Such also are the types of primary-school number teaching where a method is devised to enable the child to perform computations worthy of an adult, were the exercises accomplished by comprehending the propositions of actual arithmetic. It is falsely assumed by those who fail to think out these problems of mental adaptability that the reason and judgment are actually being trained, and that children so instructed will not need to study arithmetic hereafter by the difficult processes of thinking used by previous generations. This is a vain hope and will easily be dispelled by all who follow up these cases to the end, as the seeing process of solving problems thru objects and things and ratios is not the same as the thinking process used in adult life in all arithmetical calculations. What is true in regard to teaching arithmetic before its proper time is also true to some extent in regard to other subjects found in the present-day curriculum. The teacher is compelled to invent devices, methods of illustration, and peculiar plans to enable the mentally unprepared to seem to accomplish work that is beyond their years. The teacher's business under the contract is not to call anything into question as to the propriety or suitability of the mental diet thus served, for the teacher's real province is to invent a way that will be pleasant and attractive and will be such whereby the children to be instructed may take their daily doses of unpalatable food without making too wry a face or without expressing a proper contempt for a civilization which compels unreasonable and unwise treatment in the training and development of human beings.

Such a discussion is sometimes called pessimism by the thoughtless and the extremely conservative, but it is in reality the purest optimism. There are well-qualified persons who refuse to tell the truth, even as they know it, about such a popular and idolized institution as the public school for fear they may be misunderstood. But the true friend of public education cannot afford to stand back and decline the responsibility when he can plainly see that sensible modifications in the curriculum would mean a greater and grander life to many who are pupils in the schools and who ought to know the realities of education in the grammar grades and not be necessarily postponed until the last years of the high school or the early years of the college. The American public school is the best agency any civilization has ever invented to prepare an intelligent people for manhood's glory, citizenship, and masterfulness in character, but experience and common sense have also taught the American people that many things are needing to be brought up to a better standard of efficiency. There is great unrest among the people over these problems of the curriculum, an unrest that is already serious enough to compel those granted leadership, as superintendents and boards of education, to stop long enough to study the signs of the times and rightly profit by the truth. There is yet to be done a great constructive work in order to attain a more complete and practical education; a greater work, by far, than is yet fully realized by many of the most progressive and the most thoughtful workers for the uplift of humanity thru a genuine education. With these thoughts upon a great subject and with great faith in the ability of the American people to secure after a time "the substance of things hoped for," and with a confidence in the sincerity and fidelity of the leaders to take up the difficulties with real courage, these opinions and suggestions are respectfully submitted "with malice toward none and with charity to all."

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VII

DISCUSSION

CONCERNING A POINT IN TEACHING LATIN TO BEGINNERS

It is to be hoped that Professor H. E. Burton's article, "How to make classical study interesting," in the EDUCATIONAL REVIEW for January, 1903, may be read widely and thoughtfully, for it treats of matters which demand the attention of teachers of Greek or Latin, and it should prove stimulating and helpful. In declaring that the "discouraging condition" of unhappiness among pupils in classrooms for Greek and Latin study "is usually due to a lack of energy on the part of the teacher or a lack of appreciation of what the youthful mind requires," the writer takes a necessary step of first importance; and I should like to express the hope that he will continue to urge these teachers to work for their classes with an increase of intellectual activity and devotion.

While the general spirit of this article commands my full sympathy, there is one prominent point upon which a stand is taken with comparative thoughtlessness, as it seems to me, and perhaps as a result of only short experience in teaching beginners. Professor Burton states emphatically, as I rejoice to see, his opinion to the effect that almost everything desirable from the study of Greek or Latin depends upon the quality of the first year's work. Of equal importance with this spreading opinion is the growing understanding of difficulties besetting both pupils and teachers during this first year. School principals are speaking anxiously—almost despairingly—of trouble in finding successful teachers for beginners, and they are sympathizing more and more intelligently with scholars who find the work a racking trial. It is especially of the start in Latin that I wish to speak, and of the latter of Professor Burton's two fundamental suggestions for "tackling the problem." He asks why it is that this elementary work "does not appeal to students or actually repels them," and con-

tinues: "First, they are too immature to realize what the study does for them; secondly, it is the hardest sort of work. We must tackle this problem, then, in two ways. We must make the pupil see the benefit of what he is doing; and we must, so far as possible, conceal or disguise the fact that it is hard work." To the first of these suggestions, the experience of a score of years in teaching Latin to boys and girls impels me to say—by all means, and it is easy to do after we teachers have tried hard enough to put ourselves in the pupil's place: to the second, I should say,—we must be careful never to conceal or disguise the fact that it is hard work, but must follow an exactly contrary principle. For altho this second suggestion was doubtless intended as an exhortation to make class work more interesting by methods entirely worthy, its wording illustrates and would naturally tend to perpetuate certain ideas which are already doing much to ruin these studies.

As soon as we begin to think of the way in which teachers of first-year Latin regard their work, we realize something deplorable. How often do we hear one of these teachers express great pleasure in her subject and her classes? But not only is there a prevailing lack of genuine enthusiasm—fatal, of course, in work with children; there is, in fact, hopelessness, creating helplessness. A conviction is abroad that Latin is, of necessity, even harder to teach to young scholars than it actually is; it is taken for granted that the study has not potentially an abundance of fascination for pupils; and last, worst, and strangest, many teachers assume that children do not and will not like work which they consider hard—an assumption quickly disproved by observation.

These sentiments are voiced in the above-mentioned article. Besides intimations in the words already quoted, we may notice that the writer says: "How to make the study of the ancient classics interesting is a question that many would answer by saying simply, 'It can't be done.' It certainly cannot for some pupils. What we must consider is how to make the study as interesting as possible for the good ones and as little uninteresting as possible for the poor ones. We must do what we can to make the study of the classics more acceptable. The school-teacher must constantly have in mind

how to make the pupil realize that he is doing something worth while and how to interest him so that to some extent he will forget the difficulty of his task. For the first year of either Greek or Latin, I must confess that there appear to be but few devices that will make the study interesting. It is undeniably hard work, and it is difficult to find the sugar that will make the medicine sweet." Professor Burton believes that the first-year work should be "small and thoroly digested doses of words and grammar. The best we can do is to make it as little uninteresting as possible." "Even this burden," it is suggested, may be lightened; the monotony of oral and written drill "may be relieved, and a little variety in methods of instruction does help things along tremendously." But, "After all, the first year is one of hard work, and there is little that we can do to relieve it. With the second year, the possibilities begin to develop. We can then begin, I think, to inspire in the pupil an idea of the value of the work and cause him to forget or at least not to be oppressed by the difficulty of the task." The poor little first-year pupils!

I trust that, had Professor Burton realized the pessimism of teachers implied in his words, he would have added that to "laziness or misapprehension" as frequent cause of pupils' unhappiness; for it is more prevalent than laziness and quite as certain to prevent good and cheerful study. What chance have scholars to be happy in work planned by teachers doubting even the possibility of making it interesting, and expecting the workers to be oppressed by its difficulty and to have no idea of its value? Poor, poor youngsters! Responsive and persistent and delighted over the hardest work when they believe it to be especially worth while, and when they find in it a plenty of pleasures, tho many of these be dearly bought!

And, fortunately, first-year Latin is sometimes made just this kind of work, in cases which prove the doleful skepticism to be—to put it mildly—all nonsense; nonsense with very serious consequences. Latin is not "medicine" unless made so by teachers' mistakes. None of these mistakes is more common or more pernicious than the idea that there is little in the study that can charm children; and this error leads to another, that which I am to consider here, more briefly

than I wish. It is indicated in the suggestion to "conceal or disguise the fact that it is hard work." We should not, then, explicitly use this fact as one with which to conjure up attention, concentration of effort, manliness, courage, good spirits? Would it not be a means natural and respectable? powerful, also, and offering hope of best results for scholars? Why not one of the best for "making the pupil realize that he is doing something worth while"?

Numerous first-year Latin campaigns have been planned upon the principle of concealment or disguise of the difficulty of the undertaking: have they resulted in victories? or have they taken shape as unsystematic, bewildering labor, bringing confusion, weariness, distaste to the minds of pupils? In recent years, much of the notorious disrespect for Latin has been caused by instruction upon this plan.

When boys and girls reach the age of eleven or twelve, the mind, the character, comes to that especial need of solids, so to speak, upon which to cut its teeth. Vigor is full, spirits tremendous, energy rushing into mistakes and mischief. It is a heyday of opportunity—and necessity—for beneficent training. If the powers have not now some substantial, exacting, congenial work, there is sad waste and distortion. For children at this splendid, but hazardous, age, I know of no school experience so beneficial as that which may come to them thru elementary Latin. Their welcome is prompt for real labor which they respect; they make fine workers for a teacher prepared and skillful to meet their just, but large, requirements. Of course, these children must have sweet and spice as well as staff of life, surprises and variety as well as steady routine, pure fun in with the pure drudgery; that is but to say that the study must be made human for them. For all this Latin offers exhaustless scope and material. It has to include geography, history, mythology, legend, romance, all constantly inviting comparison with present-day fact and thought; it should be of no less ethical than linguistic interest; but, above all, it is, if taken rightly, full of life; a study of men and women, boys and girls—not of "the ancients (thought by some to have been invariably poetical)," as George Eliot says. For most of these purposes, other studies might do as well: in the supply of at

least one good element, Latin leads—in the supply of difficulties. But these children have a plenty of difficulties in other studies and in affairs outside of school? Yes, plenty; but they take them blindly, in children's way, and this gets them into troubles both unpleasant and unprofitable. They do not need more experiences of that kind, and to permit them to attempt Latin in that way is to ruin the study for them. Something altogether different they must have now, the experience of entering deliberately upon hard work, with eyes wide open to everything that the teacher can make them understand of the nature of their undertaking. Then, they must go thru the year knowing that they are encountering difficulties, undeniable, serious, respected of wise men, and believed by themselves to be well worth while. Latin thus becomes intelligent work, amounting to culture and discipline—and congenial to young America. I do not quite agree with the wise English teacher, John Charles Tarver, that "the one great merit of Latin as a teaching instrument is its stupendous difficulty." I think there is another equally great merit; but I believe that both—and especially the "wholesome difficulty"—should be explained to beginners at the very start with emphasis, clearly and inspiringly. Only after such an explanation can scholars take the best—the absolutely essential—attitude towards the work. Without this understanding, their experience must be more childish, less moral, than another which would have been entirely practicable for them. From this frankness on the teacher's part, this confidence in scholars' wish to do hard work of great value, I have seen only good results. I have seen class after class of scholars who studied well, who habitually spoke of Latin as their favorite study, and to whom one of its greatest attractions, perhaps the greatest, was that it was unquestionably hard, harder than anything that they had previously attempted. In the beginning, this circumstance had been held up to them, fairly dangled before their eyes, jokingly but also seriously, as a fine recommendation for the new study. It seemed to be satisfactory. Assuredly, they worked from their own choice. (There were no "marks," "reports," etc.) They were city children, assailed by distractions out of school hours, but the daily Latin lesson was worked over regularly,

ardently, longer, often, than parents or teacher would have wished. As they usually managed to have nearly an hour in school for a part of this preparation, teachers saw and marveled thankfully at the absorption of mind, composure, and contentment superinduced by Latin exercises. Practically, there were no complaints from them—that is, complaints of lessons: those who had no aptitude for Latin freely bewailed their own shortcomings, but, as a rule, they persistently declared a fondness for the study, and persevered on trial as long as that was permitted. The written work was large in amount that first year; the strain for accuracy, with goodly proportion of failure and disappointment, is hardly sport for older students. Of discouragement, there was, virtually, none. Why? Largely, I take it, because they were not groping and floundering amid "stupendous difficulties" for which their minds had not been prepared. For reasonable children, there was, under the circumstances, scarcely more danger of discouragement than of disillusion; the danger being lessened incidentally by the fact that their expectation of very hard work helped them to make for it adequate provision of time as well as effort. Thus, the simple truth gave them a firm footing—one that enabled them, as the work grew harder, to take it with greater security, pleasure, and benefit. Would that a message might reach the ear of every young teacher who will next fall have classes beginning Latin, and that it might be of this import: Cheer up! All the lugubrious doubts of a possibility of making first-year Latin interesting are unfounded. As for difficulties—they are friends, not foes. Make a point of thinking up those difficulties, so as to be able to present them in the true light to scholars.

The real study of Latin, without neglect of its rightful pleasures, yet with a clear understanding that, at first, it consists largely of strengthening fights against sheer difficulties—this is loved by most children beyond other studies; and tho the first year of the course may offer hardest tests to both teacher and taught, it may also be for both the year of keenest enjoyment as well as most vital benefit.

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VIII

REVIEWS

Fundamentals of child study—By EDWIN A. KIRKPATRICK. New York: The Macmillan Company, 1903. xxi+384 p. $1.25 net.

The Psychology of child development—By IRVING KING. Chicago: The University of Chicago Press, 1903. xx+265 p. $1.00 net.

Professor Kirkpatrick's book should bring to pass a signal improvement in the teaching of child study thruout the country. Altho experts in special fields will here and there find it guilty of error, as a text-book the *Fundamentals of child study* may fairly claim to rank as a standard. It surely represents the present best opinion about the nature and means of control of certain aspects of child life as well as does any single book the best opinion about adult psychology or economics or sociology.

Not only does it possess, so far as is possible in the present condition of knowledge about the psychology of children, the authority and solidity of a standard text-book; it is also eminently teachable. The text is straightforward, clear, concrete, illustrated by examples, without eccentricities of terminology or verbal quarrels, and is well divided into chapters, sections, and paragraphs. Even when too hard for normal-school students, it by no means wastes their time, and it almost never descends to such trivialities as have too often characterized books about children. The questions appended to each chapter give a chance for definite application such as should be within students' power, and the references for topical study will be of very great service to competent teachers.

The reviewer does not, in theory or in his own practice, agree with Professor Kirkpatrick in assigning two-thirds of the amount of a text-book on child study to instincts alone; nor in referring students to the crude literature of child study without special emphasis on the need of studying it critically; nor in the neglect of the type method. But these are relatively unimportant matters. The main thing is that Professor Kirk-

patrick has written a book, not to be sold or to express his own ideas, but to help teachers of child psychology. It will help them, and we owe him much.

For the original material contributed in the course of the book, for the critical attitude taken, and for the good judgment shown in practical issues, as well as for its scholarship and teachableness, the book deserves respect. Professor Kirkpatrick's study of the development of voluntary control, his attitude toward the so-called recapitulation theory, and his handling of the problem of instruction in the physiology and hygiene of sex, may be taken as samples. In each case he has been successful.

One characteristic of the present condition of child study which appears in connection with the book seems to need comment, namely, the confusion of really reliable scientific work with the most amateurish opinion. That this confusion should have characterized the proceedings of child-study associations and the articles in certain periodicals is perfectly explained by the ideals and training of the persons concerned. But that Professor Kirkpatrick, who in his text is most judicious, should refer to Dubois's *Beckoning of little hands*, Lindsay's *Mind in the lower animals*, Lucas's *What shall we do now?* Marwedel's *Conscious motherhood*, Proudfoot's *Mothers' ideals*, Winterburn's *From the child's standpoint*, the *Child-study monthly*, and the *Paidologist* in the same class with Donaldson's *Growth of the brain*, Galton's *Hereditary genius*, James's *Psychology*, Wilson's *The Cell*, and the *Psychological review*—this shows that there is still a radical defect in child study, the absence of well-defined standards by which the expert may be told from the amateur, or, still worse, the charlatan.

Mr. King attempts, in the first place, "to outline a point of view from which it is believed a good deal of the chaotic material of child study will assume a new significance," and in the second, "to present in systematic form conclusions and summaries from the current literature on the subject of children's interests."

In presenting this point of view, he insists that the classification of children's mental states under the traditional head-

ings, thought, emotion, volition, is arbitrary and misleading; to speak of precepts, images, memories, reasonings, judgments, and the like, is, to his mind, even worse. Without specifically objecting to a description in terms of instincts, capacities, and habits, he leaves the impression that these terms equally violate the demands of the reality of child life. Child psychology is to be reformed by studying each bit of mental condition or action in its relation to the whole human life of which it is a part, and, indeed, in relation to the whole social life in which it shares. Any one segment of the mental stream is to be viewed never by itself, but always with the past history and future destiny of the individual as parts of the problem. Just why, to gain the undoubted advantage of studying related rather than isolated facts, one needs to abandon the analytical method or to invent a new psychological terminology, Mr. King does not tell. Nor does he seem to have especially illuminated the psychology of childhood by the accounts of early consciousness, the emotional expressions of infancy, the differentiation of mental functions, inhibition, imitation, moral ideas, interests, and adolescence, in which he uses his method.

Mr. King's advocacy of reforms in methods of investigating and presenting the psychology of childhood would probably receive more attention from psychologists if he had made fewer errors in statements about facts and had given evidence of having personally made scientific observations.

Creeping does not "undoubtedly originate in and of itself in certain unco-ordinated movements of the legs that happen to get adjusted so as to move the body." A monkey does not "lather his face in imitation of a man whom he has just seen shaving." Much less is he "trying to define, so to speak, the experience to himself." The instincts of children and other young animals never need to be, and rarely should be, explained as the inheritance of traits acquired by ancestors. That the medullation of brain fibers has anything whatever to do with uncertainty in attention is only a conjecture of the worst type.

The summary of the literature on children's interests includes some sound general criticisms, but in its concrete detail simply repeats the few facts which students have derived from

observation, and the many opinions which amateurs have extracted from children's compositions and the like. It is to be regretted that Mr. King did not do for us in this field what, as he himself rightly urges, should be done thruout; namely, separate the reliable from the unreliable and test the latter's possible truth by scientific observations. The attempt to advance knowledge by getting together the gist of all the articles on a certain topic that have been printed in the *Child study monthly*, *Education*, or the N. E. A. Proceedings, reminds one of the lecturer who, there being some doubt as to whether infants reacted first to sounds or to smells, proceeded to put it to a vote. The long-suffering teacher may surely be excused from studying more than the ascertained facts of child psychology.

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Animal education—By JOHN B. WATSON. Chicago: University of Chicago Press. 122 p. and plates. $1.25 net.

Dr. Watson presents the facts of mental development in the white rat, and the facts of the progressive medullation of the rat's nervous system, and compares the two processes. His book is primarily a contribution to comparative psychology and nerve physiology. To students of education it will be of importance chiefly because the theory that medullation is the *sine qua non* of the functioning of a nerve cell has been used to support the dogma that certain mental functions cannot, by reason of the laws of physical growth, appear until years after birth. Dr. Watson presents strong evidence against this theory. Just how the theory ever gained credence, in the face of the fact that in the invertebrates function clearly occurs without medullation, is somewhat of a mystery.

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Special method in history—By CHARLES A. MCMURRY. New York: The Macmillan Company, 1903. vii+291 p. 75 cents.

This work is one of a series of Special Methods in the common-school branches, and is based on the principles of the author's *General method*. Its ten chapters outline a complete plan, select the materials, and discuss the method of a course in history for the grades below the high school. The final chapter of the work contains by far the largest and best selected list of history books for each grade found in any work on the subject of history teaching.

As a whole, the work will prove exceedingly helpful to that army of workers who teach many subjects, but who have little opportunity to give them special study, to say nothing of mastering their methods. Its discussions will be easily followed by the average grade-teacher because the treatment is almost entirely untechnical—even Herbartian terminology, which one might expect from the author, is kept well in the background. But to that growing number of teachers who are patiently seeking in the essence of the subject taught and in laws of mental life a solid and inspiring ground for their "methods," the book will leave something to be desired.

It is vital to progress, in teaching history, that the teacher shall consciously rest her success, not upon devices and so-called "methods," but upon principles drawn from mind or subject and which dictate the use of appropriate devices. If the teacher could find such a principle running thru the very interesting chapter on "Aims of historical instruction," he would not be left to inquire why the author found so many "aims," or why he did not find more, or how many of the aims stated are peculiar to history, and what is the relation of each aim to the fundamental aim—the "moral-social" aim?

In the chapter on the "Selection of material" the author takes the ground that since myths and legends are literature rather than history, they cannot be made the starting-point for a course in history. He also demonstrates that Greek and Roman heroes cannot be preferred to American pioneers for the first steps in history for American children. In reaching this conclusion he rests his case upon the stage of the pupil's mental

life and upon the degree of adaptation between the two classes of stories and this mental life.

An exceedingly valuable chapter deals with the story-work of the fourth and fifth grades. The point of greatest value makes clear to the teacher how the oral story enables her to set problems for the pupils' solution. How to make, in each story, a number of problems whose solution calls for facts from the child's knowledge of geography and human nature, as well as from history. Many concrete illustrations of problem-setting are given, followed by the "Story of Clark" and the "Capture of Kaskaskia and Vincennes." One of the interesting features of the discussion is the conclusion that the oral story avoids the memoriter method of study and gives the children exercise in probable reasoning. How such a conclusion will shock that pedagogical derelict on the college faculty who demands that even high-school history work shall be an appeal to memory, and that the freshman shall reach college with his "memory stored with facts"!

In spite of this hard blow deservedly dealt the memoriter method of learning history, the author clearly overstates the faults arising from the use of text-books in history when he declares: "A text-book cannot treat history in this way. It can simply present cold facts and leave the student to think or not to think, as he chooses. It gives simply answers and not problems." The author, in this chapter on the "Oral treatment of history stories," is the unconscious victim of the fallacy of setting up a good teacher and a good oral story on one hand, and a poor teacher and a poor text story on the other. It is the experience of good teachers that even with a poor text they can find more problems suggested than the pupils have time to solve, even if not one minute is spent in repeating the text.

The same unfortunate method is employed in the chapter on "Eighth-grade history," in discussing the concentric-circle plan of work in contrast with the plan based on culture epoch. Very few superintendents and teachers, except, perhaps, the poorest, will be able to recognize their work in the author's characterization of the concentric-circle plan. He certainly does not make clear just what there is in the culture-

epoch theory that forcibly compels a poor superintendent to assign the stories of Daniel Boone and William E. Gladstone to different grades, or what there is about the concentric-circle theory which compels even a good superintendent to assign these stories to the same grade.

Why should the author assume that a teacher, using the concentric-circle plan returns to a period for the purpose of a memory review only, while the teacher following a course based on the culture epoch returns to a period for a new view only? Why should the trained teacher review oftener in one case than in the other. In either case, the trained teacher looks to the mental states of pupil and to the relations in the subject in order to determine when she must return to the old period for new material and when she must review old material for a new view.

Chapter Seven presents a sensible discussion of the "Correlation of history with other studies," and Chapter Eight embodies the results of preceding discussions in "Course of study in history" for the grades. Every superintendent of schools and every teacher of grade history should own a copy of *Special method in history*.

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IX

NOTES AND NEWS

The Religious Difficulty in England

Mr. Cloudesley Brereton, whose presence at the Detroit meeting of the National Educational Association is so well remembered, has made a public proposal thru the London *Chronicle* relative to the best mode of dealing with the religious difficulty which confronts the people of England in attempting to solve their present school problem. Because of the widespread interest thruout the United States in the question of religion in education, Mr. Brereton's communication is produced in full:

To those who have attempted to look on the problem of public education from the standpoint of national efficiency nothing has been more disheartening than the inability of the two great religious parties in the State to come to some common agreement on the religious difficulty really satisfactory to both of them, which may remove this great hindrance and stumbling-block from the path of English education. Through the kindness of the Editor of *The Daily Chronicle* the present writer has been permitted to put forward the following suggestion, for which the paper itself is in no way responsible, in the hope that it may ultimately afford a possible basis for negotiation, which seems to be lacking at the present time.

It was felt by a good many persons on the introduction of the Education Bill of 1902 into Parliament that the solution of the religious difficulty propounded by the framers of the measure in question did not provide so satisfactory a settlement as that which has been described as giving the right of entry to the ministers of the various denominations into all the schools alike, whether School Board, Church of England, Wesleyan, or Roman Catholic.

The choice of the Government was probably dictated by the fact that the alternative they adopted was the easier solution—from a Parliamentary standpoint. It did not attempt to repeal or replace the Cowper-Temple Clause. But while the Act itself marks an enormous advance from the point of view of national efficiency, its treatment of the religious difficulty has scarcely proved a settlement of that thorny matter as far as the Nonconformists are concerned. Fortunately it is unnecessary here to say what one thinks of the passive resister. The truth is Churchmen of all sects are feeling that the dispute is not altogether creditable to professed Christians. This desire for a settlement is not merely confined to militant Churchmen. All who are genuinely interested in national education regret to see primary education directly suffering in some counties from the inability of the rival denominations to find a *modus vivendi*. Unfortunately the proposals of the

Free Church Council, even in their latest form, tho providing in a guarded fashion for the purchase or renting of denominational schools, do not meet the real objections of a large number of Anglicans and of the *entire body* of Roman Catholics. Their adoption, therefore, supposing for a moment such a thing were possible, would, so far from producing a settlement, only deepen, embitter, and envenom the religious quarrel. Complete secularization such as exists in French primary education is, I think, not a question of practical politics in England. We are thus driven back on the right-of-entry solution.

Here the chief opposition apparently comes from the Nonconformists and the teachers in provided (*i. e.*, Board) schools. The former urge that their ministers, more poorly paid than the average parson and often with their flock scattered over an area of two or three parishes, cannot afford to give their services to the work of looking after the religious instruction of the pupils not merely in one, but in two or even more schools. The teachers, again, in country places are afraid of being coerced into teaching dogmas in which they do not believe. They also object on principle to giving their services for nothing. These objections, which are *practical* rather than *fundamental*, appear to be worthy of the utmost consideration. Is it not possible to meet them in some way?

The present writer has recently been studying secondary education in France for the Board of Education, and has been much struck by the fact that in the State *lycées*, where there are a sufficient number of Catholic, Protestant, or Jewish boarders, there is to be found a Catholic almoner, a Protestant pastor, or a Jewish rabbi paid by the State. And this system persists in spite of the present anti-clerical campaign in France. Would it not be possible to extend this system to our primary schools? One says advisedly "extend" and not "introduce," for the principle already exists to a certain extent in English administration. We have our army chaplains of the various denominations paid by the State. We have also denominational chaplains for work-houses, poor-law schools, and burial boards—who are actually paid by the localities! Why should we not have our school chaplains paid by the State?

Naturally one would not provide State chaplains for every two or three children belonging to one or other particular religious denomination, tho, of course, it would be always open to the minister of the denomination to which such children belonged to attend and give them definite religious instruction. But whenever there were a group of say twenty or twenty-five children desiring religious teaching of a particular kind, then a school chaplain could be appointed. The Nonconformists appear to be generally so satisfied with the ordinary religious instruction given in the Board schools that it should not be impossible for the local authority in connection with the Free Church Council who are the accredited mouthpiece of the various Nonconformist denominations to decide on a regular syllabus of instruction to be given by the "Free Church" chaplains. Again, the mere fact that the dissenters would be allowed to group together the children of the different Nonconformist denominations in order to qualify for a Free Church chaplain would allow them to secure the nomination of far more chaplains than the denomination would obtain separately.

All parents would possess, as heretofore, the right to withdraw their children altogether from religious instruction, or, if represented by a sufficient number of children in the school, a group of parents could claim, should they desire it, a right to merely moral instruction on the lines laid down by the league for moral instruction. In the same way the Jews, or the Unitarians who are too free to be included in the Free Church councils, would severally be entitled to a school chaplain, provided they furnished the requisite contingent of children. All chaplains would be paid by the State, and those of the three main types would be appointed on the nomination of the Bishops in the case of Roman Catholics and Anglicans, and of the Free Church Council in the case of the Free Church chaplains. Chaplains might be in orders or laymen. This would allow of the appointment of either a minister of religion or of one of the school-teachers. One day a week might be set aside for religious instruction—the Saturday whole holiday, for instance. In the case of the 6000 schools with a single room, where two chaplains existed, it could be arranged to give one the morning and the other the afternoon. This would solve the one-room difficulty. One chaplain could easily serve two small schools, if not too far apart, in one day. Were the holiday varied, a peripatetic chaplain could serve four small schools in two days. There are some 20,000 primary schools in England and Wales. Assuming that £15 a year were paid to the school chaplains, and that they averaged three to every two schools (there would hardly ever be more than three, and very often only one), the cost to the Exchequer would be £450,000 a year. It might be much less, if it were agreed that when the management of a non-provided school desired to retain the appointment of the head master, then the State would only pay the salary, if there were any to be paid, of the school chaplain or of the school chaplains not belonging to the denomination to which the school belonged. Even supposing the State in such cases always appointed a Free Church chaplain, if there were but one child (for such a school would be either Anglican or Roman Catholic), the cost would be no higher. If these last suggestions were not adopted, then teachers would in all cases be appointed by the local authorities.

These figures and suggestions are of necessity largely provisional, but even if we had to pay still more, it would be far cheaper in the end than the attempt to buy out or replace the non-provided schools at an outlay of £40,000,000, equivalent, at the present price of Consols, to a yearly charge of over £1,120,000 a year. Moreover, such proposals, drastic as they are, possess no element of finality about them. They only condemn us to a religious war of the worst possible kind.

On the other hand, the proposals outlined above proscribe neither of the two parties, but rather attempt to reconcile them by frankly recognizing their wants and differences, and by taking them, as far as possible, into consideration. As has already been indicated, the suggestions themselves are purely provisional. The important question is whether the two parties interested will accept the principle of the State, according the most favored nation treatment to each of the three main types of religious teaching in England. If they can accept this, the way to the conference table is open. The particular form the settlement may take must be threshed out in

debate. In fact, the principle would not have been developed here at all if one had not realized the need of showing one possible way in which the idea could be rendered workable. Certainly, for those who remember that England is composed not merely of Anglicans, or of Roman Catholics, or of Nonconformists, but of members of all these three denominations, who together make up the whole community, the question is not merely a religious, but a State one. If the State can succeed in helping these rival religious agencies to agree upon observing a truce of God in the schools, even tho the entire cost of the Eirenicon fall on the Exchequer, the gain to the nation at large will be in every way enormous.

New York Teachers on School Discipline

For some months past the Male Teachers' Association of the City of New York have had under consideration the subject of discipline in the schools and of the possible means of improving it. At a recent meeting, the association, with but one dissenting vote as to the first paragraph, adopted the following recommendations on the subject:

I—That the Board of Education rescind the by-law which commands that all pupils be dismissed not later than 3.30 P. M. At the same time we recommend that in each school some definite arrangement be made between the Teachers and the Janitor thereof, to the end that the work of the Janitor and his assistants be in no way impeded.

II—That the power of the Principal to suspend a scholar be made absolute. We believe that in such matters the Principal is the best judge; and, being the one responsible for the management of the school, should have full power to manage it. If he fail, the remedy is to proceed directly against him and remove him for incompetence.

III—That the power of the Principal to promote during the term for exceptional ability, or to reduce to lower grade, for incompetence or neglect of duty, be made absolute. We believe that this power, placed without restriction in the hands of the Teacher and Principal, will go far to develop a sense of responsibility in the children that will materially lessen the mere question of control.

IV—That the movement to provide adequate accommodation for truants and incorrigibles be hastened. We realize that the restrictions placed upon the power of the Principal to expel have risen chiefly from the fact that there seem to be no sufficient means of caring for the number of boys who should have been expelled as moral detriments to the public schools.

V—That generous provision be speedily made for the care of defectives, neurotics, ill-nurtured children—those needing special care in small classes under charge of a Teacher peculiarly adapted to that kind of work.

VI—That changes be made in the distribution of our school population, so as to relieve, as far as possible, the wretched overcrowding that exists in so many districts, while others have many seats to spare. We are convinced that reasonable terms can be made with the railroad companies for

moving some of the elder children uptown in the half-filled cars at the time the crowds are rushing down in the morning.

We believe that the lack of room in our schools is a reproach to the City of New York, and that every effort should be made to bring the citizens to a realizing sense of the conditions. But in the meantime much can be done to relieve the crowding in some places.

VII—That there be established elementary technical schools in various parts of the city, which shall not be designed in any sense as reformatories, but which shall present a course of study, concrete and practical in its nature, and necessarily somewhat elastic; designed in a broad way to meet the demands of those who have little power of abstract thought, or who have strongly marked special aptitudes, mechanical, artistic, scientific, etc. These are the scholars who, tho honest in intention, are sources of constant trouble in the ordinary class, because they are not interested and have no taste for that which is suited to the majority.

We believe that this is the direction in which education is tending, and we urge it here because it has such a close connection with the question of discipline.

VIII—That Teachers and Principals make more use of the strength that can be gained by a hearty co-operation between teacher and parent. We are firmly of opinion that the teacher will be amply repaid for the time and the trouble it will cost to become personally acquainted with the parents of the children in his class.

IX—And lastly, we urge the Teachers and Principals thruout the city to unite in an honest and sustained effort to manage the schools, if possible, without corporal punishment; and to that end we solicit the active co-operation of all the members of this Association to secure the reforms herein enumerated and ask for any further suggestions that you think will tend toward the betterment of the system.

The "Berechtigungsfrage" in Germany

The December (1903) number of *Hochschulnachrichten* contains an interesting article (reprinted from the *Frankfurter Zeitung* of December 4, 1903) by Professor R. Eickhoff of Remscheid, Rhenish Prussia, on the present state of the "Berechtigungsfrage" in the German Empire. The question is briefly this: Shall the graduates of the *Realgymnasien* and the *Oberrealschulen* be admitted to the universities, and with what restrictions? Or, from another point of view: How far shall the monopoly formerly enjoyed by the classical *Gymnasium* be infringed upon?

In 1902 the reforms inaugurated in Prussia on the initiative of the Emperor (in his capacity as King of Prussia, however—a fact often lost sight of in this country) were carried thru,

and the system now in vogue in that part of the Empire is likely to remain in force for some years at least. Graduation from a *Gymnasium*, as of old, entitles the graduate to study under any faculty of any Prussian university. Upon the graduates of *Realgymnasien* and *Oberrealschulen* certain restrictions are imposed. One coming from the *Realgymnasium* may not study theology until he has passed an examination in ancient languages. The privileges of the graduate of an *Oberrealschule* are still more closely limited: for admission as a naval cadet he must, in lieu of Latin, pass good examinations in French and English; if he wishes to study medicine, he must be examined in Latin; if theology, in both Latin and Greek. Like the less advanced courses in Latin and Greek now offered by some universities to graduates of *Realgymnasien* who wish to study law, these regulations are regarded by Professor Eickhoff as temporary expedients only. While the results gained by the champions of the non-classical high schools already exceed what they thought barely possible a few years ago, their demands have grown with experience, and they confidently look forward to a time, not very far distant, when graduates of *Gymnasien*, *Realgymnasien*, and *Oberrealschulen* alike will be admitted without restriction to all departments of all German universities.

The other states of the German Empire have shown as yet little inclination to follow the lead of Prussia, with the exception of Wurtemberg. (It must be remembered that the administration of schools and universities in Germany is not in the hands of the *imperial* authorities, except in Alsace and Lorraine.) Without the full co-operation of the other states the value of the Prussian reforms will be considerably impaired. In Bavaria no serious intention of following the Prussian lead has yet been manifested. An attempt to secure the privilege of studying law for the graduates of *Oberrealschulen* and *Realgymnasien* was defeated in the Bavarian Legislature. Hamburg, Bremen, and the Duchy of Oldenburg have taken similar action. In Wurtemberg, where the *rapprochement* with Prussia has made great strides during the last few years (even the sergeants and corporals in the Wurtemberg army-corps are learning the nasal jargon of the Prussian drill-yard!)

the current has set strongly towards the reform. In June, 1903, after long discussion in the Assembly, the question of admitting graduates of *Realgymnasien* to the study of jurisprudence was settled in the affirmative. The faculty of law at Tübingen (the only university of Wurtemberg), altho as recently as 1895 it had opposed such a step, at last voted to make no objection, and in this action it was followed by the faculty of political science.

We need not enter here into minor details of Professor Eickhoff's article. It is clear that only a beginning has been made in the adoption of the liberal Prussian system, but the change seems sure to come everywhere. Incidentally, some points mentioned by Eickhoff deserve notice, as showing how firm a hold a German state keeps upon its subjects. An American reader would naturally say: "If the Prussian universities thus freely admit to the study of law men who do not come from a classical *Gymnasium*, what is to prevent a graduate of a *Realgymnasium* in Bavaria, for instance, from entering Bonn or Berlin or Göttingen, completing his legal studies there, and returning to pass the Bavarian state examinations and to practice in that kingdom?" In such a case the Bavarian government would simply refuse to recognize the candidate's period of study in Prussia as entitling him to admission to its own examinations, without passing which he could not practice in Bavaria. The following is very characteristic of the German official attitude: After the Senate of Bremen had decided not to recognize the right of graduates of its two *Realgymnasien* to study law (as Bremen possesses no university, such persons would naturally have to study in another German state) the Prussian Minister of Education, with striking politeness, announced that citizens of Bremen who had graduated from a *Realgymnasium* would not be permitted to study law at any Prussian university. The Prime Minister of Wurtemberg, when the action mentioned above was taken, announced that the admission of subjects of other German states, graduates of *Realgymnasien*, to the legal faculty of Tübingen would be made a question of reciprocity.

It will be seen at once how unsettled is the state of affairs in the German educational world. In comparison with the

idyllic conditions of a generation ago, when only the *Gymnasialabiturient* (or the foreigner) might hope to pass thru the door leading to the Rector's office, therein to receive the solemn hand-shake which admitted him to the *civitas academica,* confusion seems to reign. But before many years have passed we shall doubtless see all the German states marching steadily behind the Prussian educational band.

Teachers' Salaries

The movement set on foot by the National Educational Association to bring about public consideration of the provision now made for the salaries of teachers in the tax-supported schools has found support in a number of State teachers' associations. In Wisconsin, former State Superintendent Harvey was chairman of a committee which submitted a report from which the following extracts are made:

1. In any consideration of the question of improving teachers' salaries, two parties are to be considered—the teacher employed and the community employing the teacher.

2. Teachers should recognize that any effort to secure, or the acceptance of, large salaries for poor work is unreasonable and unjust, and is an attempt to wrong the public, or a wrong perpetrated upon the public.

3. Teachers should remember that the best service they can render in the matter of increasing salaries lies in intelligent and consistent effort to elevate the ideals of the people in the communities in which they labor as to the quality and amount of work which should be demanded of the teacher and the proper pay for such work.

4. Teachers should remember that when a contract has been entered into with a school board, its binding character should be recognized and that the only legal and honorable way of dissolving it is by mutual consent of both parties.

The community should be led to recognize:

1. That the work of the teacher in training boys and girls, so as to fit them to meet properly the responsibilities of life, is the most important and difficult work in which a human being can engage.

2. That proper equipment for this work demands native ability of a high order, special training, and such an interest in it as demands and secures the best energies the teacher is capable of exerting for his own and for his pupils' development.

3. That the maintenance of a school taught by a poor teacher is a poor investment, no matter how low the salary, and a worse investment when a large salary is paid to such a teacher.

4. That the law of supply and demand must inevitably determine the salaries to be paid in the teaching profession as elsewhere where the right of

freedom of contract exists; but that the only demand which can be justified on economic, social, and political grounds is the demand for good work, growing out of native ability, special preparation, and untiring zeal, and that the only supply which should be recognized as a factor in determining salaries is the supply which meets this demand.

5. That the present relations existing between the annual salaries of the majority of teachers and the cost of living make proper the demand for better pay for good work, the best pay for the best work, and no poor work for any pay.

In pursuance of a request of the Committee of which Mr. Harvey was chairman, the Association authorized a standing Committee on Teachers' Work and Wages and made an appropriation of three hundred dollars for its use.

Shortening the School Course

The very striking article which appears in this issue of the EDUCATIONAL REVIEW over the signature of President Seerley of the Iowa State Normal School should be carefully read and pondered by those teachers in schools and colleges who insist that the present educational course cannot be shortened without disadvantage to the large majority of students. Professor W. H. Bender of Iowa State Normal School, who has worked out the details of the problem which President Seerley discusses, has put into actual practice a course of study that reorganizes entirely the work of the grammar grades. It is found, for example, that the reorganized course of study prepares pupils so that they are qualified to begin the study of Vergil at the close of the eighth grade, and to enter upon third-year work in German, as well as courses in physiography, literature, algebra, and general history at the same time. It is apparent, therefore, that President Seerley has not discussed a theory, but is stating the results of several years of experience.

This sort of work amply justifies the leadership which the Iowa State Normal School has assumed, and it would be well if more normal schools would interest themselves in making similar experiments with the view to decreasing the time and cost of education as now given.

Educational journalism has received an important addition to its ranks by the appearance on January 1 of the new

English monthly, *School*, edited by Mr. Laurie Magnus and published by John Murray. *School* is intended to be a monthly record of educational thought and progress and will undoubtedly attract attention in the United States. An American letter by Professor George H. Locke of the University of Chicago is included in the opening number. Other articles of importance are contributed by the Reverend T. L. Papillon of the Mosely Commission, Professor John Adams of the University of London, Lord Avebury (better known as Sir John Lubbock), the Bishop of Manchester, and Mr. Cloudesley Brereton.

School is a welcome addition to current educational literature, and deserves success.

The decision of the Executive Committee of the National Educational Association to put forward from July 5 to June 28 next the date for the opening of the next annual meeting, to be held in St. Louis, is in the highest interests of the Association and will be received with entire approval. The fact that the National Convention of a great political party is called to open at St. Louis on July 6 is a conclusive reason why the National Educational Association could not hold a successful meeting there at the same time. Not only would all means of transportation and all hotels be crowded to suffocation at most unreasonable prices, but the press of St. Louis and of the country would bestow but scant attention upon a meeting of teachers, however large and important, in the presence of a great national political convention. The educational meeting would be dwarfed and ruined; but now that it is fixed for an earlier date, it should be markedly successful.

As this issue of the REVIEW goes to press the outlook is brighter than ever before for a complete reorganization of the New York State school system by the unification of the existing Department of Public Instruction and the University of the State of New York, presided over by the Regents. So many plans to this end have been proposed in years past, and they have met with so much opposition from various quarters, that experience suggests the wisdom of not expecting too much at

present. Nevertheless, the statesmanlike action of Superintendent Skinner in proposing a constitutional and practicable plan for the unification of the two educational departments, and his generous and public-spirited action in removing his own name and personality from consideration in connection with the plan, have produced a profound impression upon the public mind. The educational leaders of the State almost, if not quite, without exception have publicly indorsed the plan proposed by Mr. Skinner.

This plan involves the creation of a single educational executive for the State of New York, to be known as the Commissioner of Education, this commissioner to succeed to the duties at present performed by the State Superintendent of Public Instruction and by the Secretary of the Regents. It is suggested that the first commissioner be chosen by the present Legislature, in view of the fact that by the terms of existing law the Legislature of 1904 is empowered to choose a successor to Mr. Skinner as State Superintendent, who goes out of office in April next. The plan further provides that all future Commissioners of Education shall be elected by the Regents, acting as a State Board of Education. To qualify the Regents for this new and high authority, it is suggested that their number be reduced from nineteen to nine, and that they be chosen for a long term instead of for an indefinite term, practically life, as now.

It is difficult to see what reasonable objections can be made to carrying out this plan, which is in substance a revival of the principles contained in the so-called White Bill of 1900, framed in accordance with the recommendations of the admirable commission presided over by the late Frederick W. Holls, appointed by Governor Roosevelt, to conduct an inquiry into the entire subject.

The alternative suggestion, which apparently has the support of some of the present Regents and of their Secretary, that a sharp line of demarcation be drawn between public elementary schools on the one hand, and public high schools and academies on the other, and each confided to the care of a separate State authority, is at war with every recognized principle both of education and of public administration.